

Marine Corps Gazette

October 1952

thirty cents

In This Issue:
MARCH OF THE IRON CAVALRY

Marine Corps Gazette

OCTOBER 1952
NUMBER 10
VOLUME 36

PROFESSIONAL MAGAZINE FOR UNITED STATES MARINES

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COVER



Marine tanks were pretty busy with Bunker and Siberia Hills in Korea about the time the October cover was in the making, so GAZETTE artist, PFC Tony Kokinos, and a cameraman trotted out to the tank park at Quantico to pose the models for his painting. It's the M-26 tank that figures so dramatically in this month's story of the 1st Tank Battalion in Korea, page 46. BACK COVER: The sleek, powerful new T-48 tank rolls off the assembly line at the Chrysler Delaware Tank Plant.

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TO THE EDITOR

Message Center

Grateful Mother . . .

DEAR SIR:

In requesting a change of address for my son's subscription to the MARINE CORPS GAZETTE, I cannot refrain from adding a note of appreciation for the privilege of reading your wonderful magazine. I sincerely feel that if more parents and families of our servicemen would read our servicemen's publications, they could do a lot toward overcoming the apathy and indifference of our average civilian today. I am grateful to my son for his thoughtfulness in having his service magazines sent home; they will be bound for him each year.

GLADYS A. WALLER,
Chehalis, Wash.

Food for Thought . . .

DEAR SIR:

I just received my August copy of the GAZETTE and noted the request of the Netherlands Marine, Peter Will. I am enclosing a check for a year's subscription to the GAZETTE for him. My own personal copies are now going to a British Marine.

In that I do not read Dutch, perhaps it would be best for the GAZETTE to short-stop the copies of *Allehans* for use in the Marine Corps Schools — where some officers perhaps have a knowledge of that language. I would, however, like to enter correspondence with the Dutch Marine if possible.

As usual I found much food for thought in your latest issue. That letter on the Massachusetts Military Academy idea was most interesting. That basic concept of a state military school was historically the reason for V.M.I., the Citadel, Norwich, and others — that the federal academy at West Point could not satisfy the needs of the state.

Each month the GAZETTE pays five dollars for each letter printed. These pages are intended for comments and corrections on past articles and as a discussion center for pet theories, battle lessons, training expedients, and what have you. Correspondents are asked to keep their communications limited to 200 words or less. Signatures will be withheld if requested; however, the GAZETTE requires that the name and address of the sender accompany the letter as an evidence of good faith.



MSgt C. V. Crumb's *A Staff NCO School?* was excellent reading. I see in it some of your ideas on using the GAZETTE for new suggestions and the like. I will frankly admit that most of my training as an intelligence officer at battalion level had been based on watching my top-flight battalion NCO intelligence chief in operation. And I dare say that many another lieutenant in World War II had his instruction from a similar source. The article by officers Metzger, Oppenheimer, and Price on *Trial by Ice* was also a fine thought-provoking essay. It did much to prove that Marines are keeping abreast of all possible landing areas; that the beaches of World War II, while difficult, might not be the last word in a long distinguished line of landings.

May I offer my sincere congratulations on a continuously fine magazine.

TYSON WILSON,
Dumont, N. J.

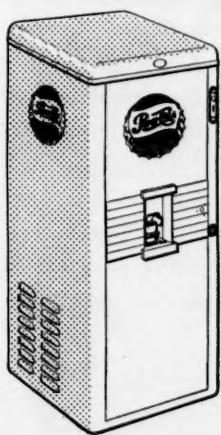
Island not Sound . . .

DEAR SIR:

Congratulations on your excellent feature *Trial by Ice* in your August issue. However, throughout the article you refer to the icebreaker *USS Burton Sound*. To my knowledge there were only six ships built of the type you pictured. Originally three of these went to Russia, one to the Coast Guard (*USS Norton Sound*), and two to the Navy (*USS Edisto* and *USS Burton Island*). Later one was returned from Russia to the U. S. Navy and is now the *USS Atka*.

The ship you speak of in your article is the *USS Burton Island*, AGB-1. Your picture on page 49 clearly shows her number "1" just aft of the forward anchor, below the ice line. I served on board the "BI" in the winter and summer arctic and Point Barrow resupply expeditions in 1950 and 1951. I know there are many of her crew that would appreciate the

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JAMES J. SIFFRIN,
Los Angeles, Calif.

ED: We deserve to be keel-hauled for this bust. To all crew members and former crew members of both ice-breakers, our apologies. *Jane's Fighting Ships* will forevermore be on our desk.

Questions and Answers . . .



DEAR SIR:

From time to time throughout most of our careers certain technical and tactical problems arise for which no local or immediate answer is available. The long routes of official correspondence and the educational doors of Quantico are too remote for most of us in the field to satisfy our queries. As a result, we are often prone to fabricate an answer based on hearsay or the advice of others. Often these answers are wrong.

The MARINE CORPS GAZETTE has, on occasion, invited suggestions and criticism for its improvement with an objective toward the benefit of its readers. With this view, I desire to recommend that a "Question and Answer" section be established in the GAZETTE to answer such technical, tactical, and logistical questions as may be extended by the readers.

A question and answer series would be a boon to many in the Marine Corps by offering an interpretation of controversial points, and would to a degree represent a limited educational media.

I will not propound my questions or the types of questions to be used at this time; they would only tend to lengthen this letter beyond appraisal. Nevertheless, should a question and answer section be included in the GAZETTE, I will be among the first to utilize its province.

CHARLES R. STILES,
Capt, USMC
Camp Lejeune, N. C.

ED: We like your idea, but our staff isn't large enough to handle the necessary research. We are aware that this is the stock answer to every threat of an increased workload, but in this instance you've got to believe us.

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Volunteer Recruiting . . .

DEAR SIR:

The article *Volunteer Recruiting Is the Answer* by LtCol A. D. Cereghino in the August GAZETTE contains potent argument for the continued side-by-side existence of selective service with volunteer recruiting. The Marine Corps has always been a "volunteer" service in principle, regardless of emergency measures which have from time to time required our strength to be built or sustained. Let's hope it always will be.

One point of argument put forth in LtCol Cereghino's "objective evaluation" — his first — states that "volunteering procedures are cheaper." This is supported with a "comparative" analysis of the cost to Selective Service plus the cost to the government for one draftee as opposed to the cost to the government for one voluntary enlistee. The net result of his arithmetic indicates "costs per draftee of \$123.00 from home to service. A volunteer costs the Government only about \$60.00; savings \$63.00." I doubt it!

The fact that has apparently escaped notice here, although I hope I'm wrong, is that while the administrative procedures for processing a man into the service weigh heavily in favor of the volunteer system, we have yet to hear of Selective Service having to send out recruiters or having to furnish motivating advertising to get an inductee interested.

Let's face it — recruiting is expensive. If the total real costs of the two systems are fairly compared in this instance and the results are as stated, we are more efficient and effective in our recruiting than most of us had ever supposed. However, even if these costs were double they would be more than offset by the residual economies, monetary and manpower, and the longer term — hence more effective — fighting value to the volunteer. Selective Service is an undoubted necessity to our national security but is far from the complete answer to our present situation. The more we can depend on volunteers the better off we'll be.

GORDON H. WEST,
LtCol, USMC
Quantico, Va.

Recent Survey . . .

DEAR SIR:

As an ex-business manager of the MARINE CORPS GAZETTE, I have been following with interest the progress and content of the "Professional Magazine for Marines."

In looking over the July issue, I noticed that LtCol Frank Mallen raised the point of readership in the GAZETTE. While LtCol Mallen dealt in generalities, he came very close to a recent survey on readership. This survey was conducted by the promotion manager and covered a complete cross section of the GAZETTE's subscribers. The editor and publisher is well versed on this subject, but the readers might well be interested in the gain and popularity of the magazine.

Based on this recent survey, my computations show that

Overwhelming Endorsement

for the

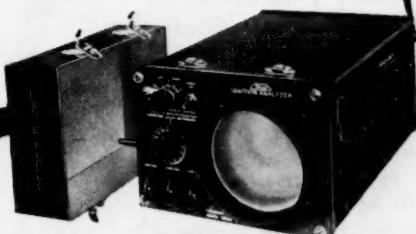
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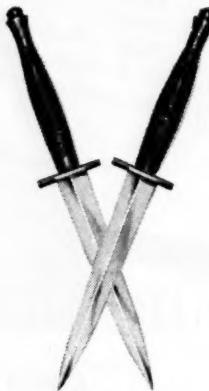
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According to the information that I have at the present time, the July circulation was more than the *combined* circulation of the Army and Navy counterparts (*Combat Forces Journal* and *Naval Institute Proceedings*). The circulation was over 66,000 copies.

During the first six months of 1952, the GAZETTE gained an increase of 28 per cent in circulation over the previous six months. The average paid circulation for the past six months has been computed at 51,233. This represents an all-time high. The previous high circulation was reached during World War II and stood at 44,000 copies. I would like to point out that the World War II circulation mark was exceeded with the January '52 issue.

It is interesting to note that the highest gains in the past six months have been made in the Pacific states (up to 47 per cent).

The facts and figures show that the GAZETTE is being read more and more. Readers may have already guessed that it is also read behind the Iron Curtain.

PAUL F. BENT,
Maj, USMC
Korea

Fighting Men . . .



DEAR SIR:

Having gritted my teeth through the reading of 2d Lt Ryan's *Nobody Wants To Be a Fighting Man* in a recent issue and Lt Van Cantfort's and other supporting letters, I am forced to take my pen in hand and come to the defense of the Marines who were civilians not more than a year ago and who most certainly want to be fighting men.

These young lieutenants have basis for some of their comments but I feel they are too arbitrary in saying *nobody* wants to fight. I spent a few years in the NROTC and was closely associated with Marine recruiting and many of my lieutenants and men who volunteered for the Marine Corps are fighting in Korea now and some have died because they asked to be fighting men.

I dare say experiences I have encountered as CO of 1/6 might change these discouraged souls' minds. To make my case stronger, I might say that in an infantry battalion H&S company you can't classify wiremen, radio men, cooks, and

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I have on file in my headquarters over 50 letters of infantrymen volunteering for Korea; I have over 300 men on my Korea priority list, and I have had as many as 48 men at one request mast who were desirous of going to Korea to fight. These men were all of the rank of sergeant and below and are those who carry the rifle and wield the bayonet.

In view of the above and the fact that the Commandant of the Marine Corps has received thousands of letters from men in all branches of the Marine Corps asking transfer to the 1st Mar Div is evidence enough that "Somebody Wants to be a Fighting Man."

CLELAND E. EARLY,
LtCol, USMC
Camp Lejeune, N. C.

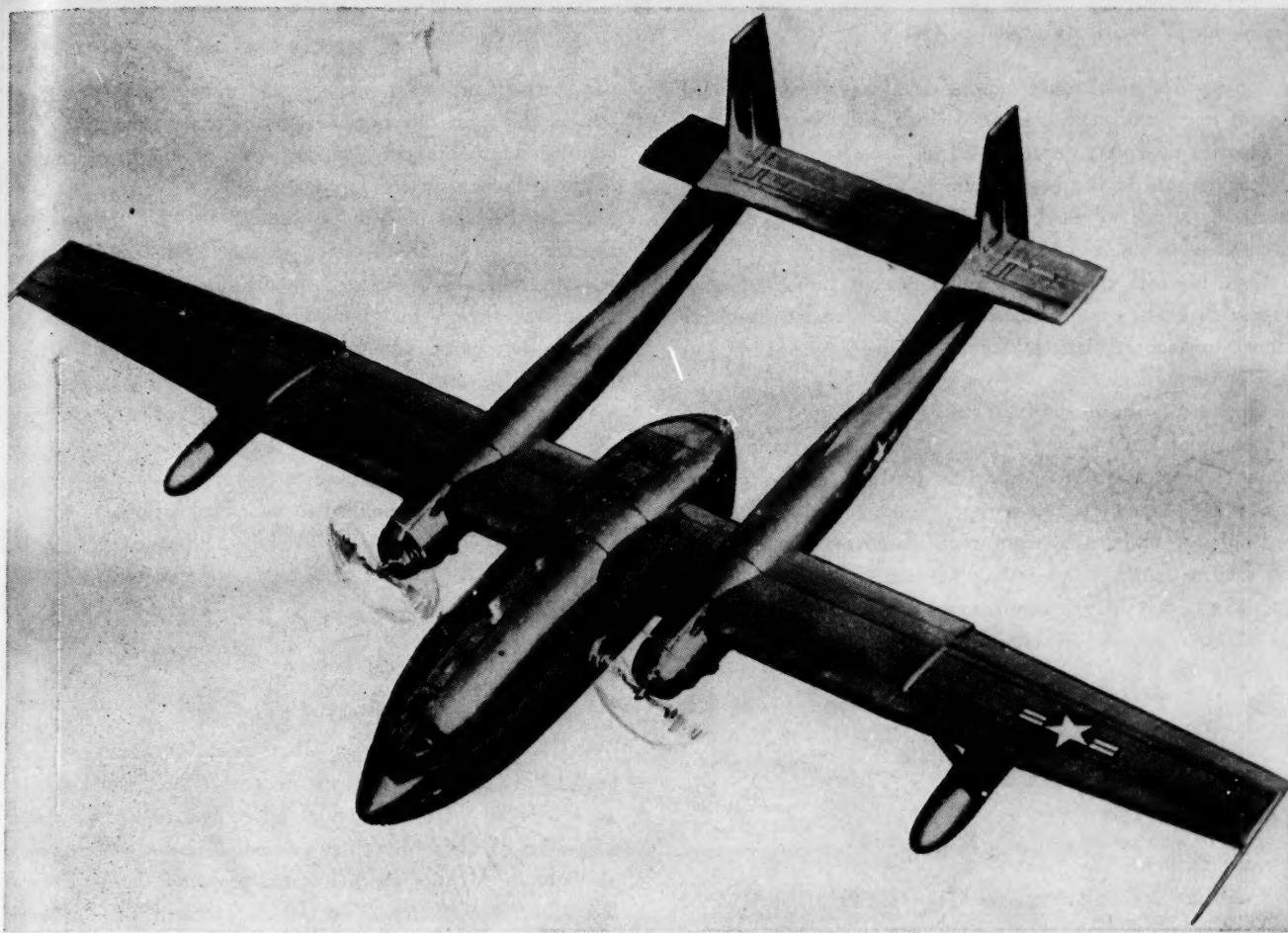
Combat Issue . . .

DEAR SIR:

With regard to economy in the Marine Corps, something should be done about clothing wasted by the Marine who goes overseas in today's replacement draft, or at any rate the drafts of one year ago. These men were required to take to the combat zone a full issue, less blues. They spent much valuable time at Camp Pendleton, prior to their departure, drawing authorized clothes, and upon their arrival at Kobe, Japan, these replacements then had to leave their full sea bags at the Combat Service Group's warehouse. Many of them kept unnecessary items; took them to the forward area, and proceeded to lose, discard, or "make presento" expensive government property. When these same men returned to the U. S. they were completely outfitted with whatever they lacked, which ranged from a necktie to a full issue. This is costly to our government. If it isn't appalling from just the viewpoint of a Marine, remember we are all taxpayers. The following is a brief outline of a proposed system to eliminate such waste.

When a man first joins a replacement draft at Camp Pendleton, present him with a list of clothing called the "combat issue." He would be required to have that clothing on his departure from the U. S. and no more than that. It would consist of the minimum clothing necessary for a rifleman in the theater to which he is going for that season of the year. This requirement would be obtained directly from the G-4 of the combat division. It would be a realistic list, and the amount

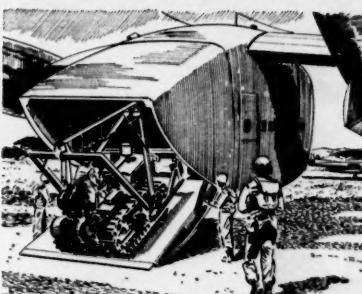




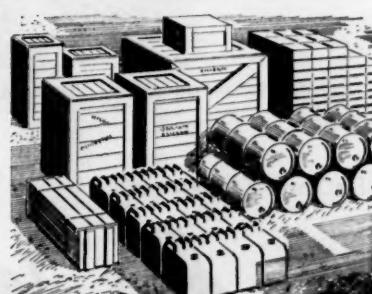
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would be so small that the Marine could not possibly discard any of it upon his arrival in his combat unit.

Prior to the man's departure all his other uniforms should be packed into his sea bag and stored at Camp Pendleton to await his return to the U. S. The Marine would then go overseas unencumbered by unnecessary clothing.

Once overseas, the Marine would receive, through normal supply channels, any additional clothing needed as a result of climate or tactical changes. Survey would be accomplished as it is presently done.

Upon his return to the U. S., the Marine would receive his sea bag and new clothing to replace his combat issue. Any clothing he brought back would be turned in to the quartermaster for reclamation and re-issue to outgoing drafts.

I am sure that this system, or one based on it, would save the Marine Corps a tremendous amount of money in future operations. Let us not continue to overburden the Marine; let us not continue the unnecessary waste of the taxpayers' money.

FREDERICK D. SINGER,
Capt, USMC
San Diego, Calif.

Drop that Sight! . . .

DEAR SIR:

I was just looking through the GAZETTE. On page 42 of the June issue, the drawing of the heavy machine gun is in error. It is a small matter, but it should be drawn correctly. You show the gunner firing with his right hand and the rear sight is up. This is wrong. You traverse with your right hand and fire with your left hand; and your sight is down while firing.

CURTIS M. SHERRY,
PFC, USMC
Korea

ED: Congratulations on your attention to detail. The error is ours.

School for Three-Stripers . . .



DEAR SIR:

In his article *A Staff NCO School?*, MSgt Crumb was entirely correct when he said that the "standing of the Marine Corps today as one of the finest military groups in the world could not have been attained without the sterling performance of the senior noncoms." A staff NCO school, if conducted for

the Marine Corps as a whole, would undoubtedly be a large step in the right direction. However, one of the main prohibiting factors of such a school would be the great amount of travel expense involved.

Along the same idea, in the summer of 1951 the 1st Mar Div started an NCO school for sergeants. Three-stripers were selected from each company in the division and sent to a school of several weeks' duration. This school was conducted at division headquarters, and some of the finest officers and NCOs in the division were the instructors. The school was initiated because of the rapid promotions, and it was a basic school designed along the same lines as the officers' Basic School in Quantico. It proved to be very valuable in making noncoms much more qualified to wear their stripes.

NORMAN W. HICKS,
Capt, USMC
Lafayette, La.

For the Record . . .

DEAR SIR:

Reference is made to your article in the August 1952 issue entitled *Marine Air Covers the Breakout*. It is stated that by 18 December the evacuation of all equipment and personnel of the 1st MAW had been completed. There is an interesting sidelight to this fact which I would present: Marine Tactical Air Control Squadron Two, which operated the X Corps TACC under MajGen Field Harris, passed control to the AGC, Mt. McKinley, on 14 December. On 16 December, MTACS-2 went aboard LST 898, and with their field equipment mounted on the top deck, established a secondary AGC to back up the Mt. McKinley. All control nets were maintained on a 24-hour basis until 24 December. At 1630 on Christmas eve, MTACS-2 left Hungnam harbor, thereby being the last 1st MAW unit to depart. This information may be verified by referring to the MTACS-2 special action report for that period.

JAMES A. ETHERIDGE,
Maj, USMC
Colorado Springs, Col.

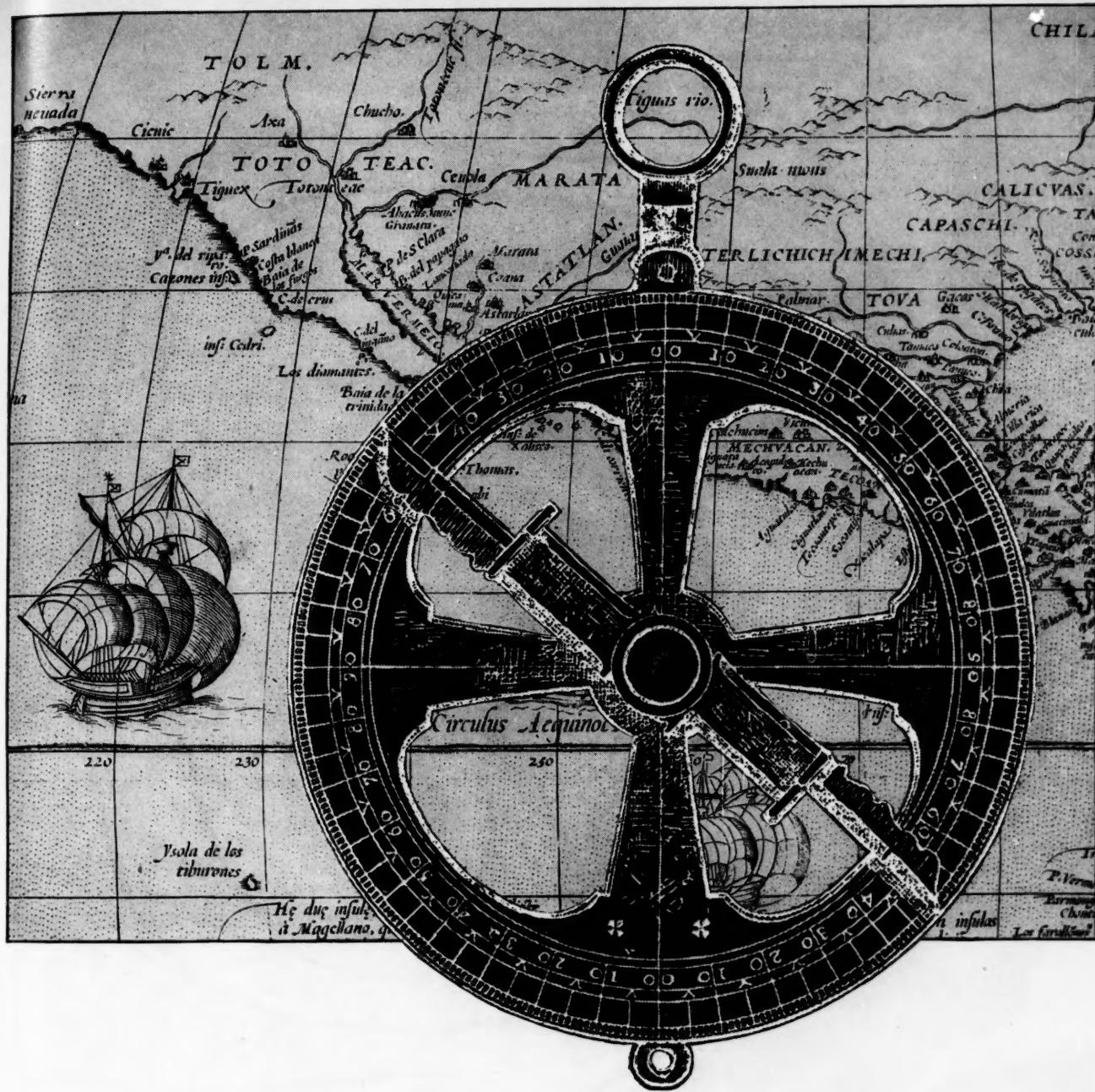
Volunteers vs. Inductees . . .

DEAR SIR:

Because I have done duty at an Armed Forces examining station and am currently serving in the capacity of a recruiter, I found LtCol Cereghino's article *Volunteer Recruiting is the Answer* in the August GAZETTE to be very interesting and truly appropriate.

As far as allocation to the different services is concerned, it was very difficult in the past to satisfy a man's choice of service. Naturally, everyone couldn't be satisfied but I believe that every effort was made to satisfy as many men as possible under the circumstances that existed.

In addition to the many advantages of volunteer recruiting



Ancient Problem... MODERN SOLUTION

For centuries, a mariner's only instruments of navigation were the sun and stars. Then came early forms of compasses and astrolabes—primitive instruments—but at least they relieved navigators from utter dependency on the solar system.

With the development of the Sperry Gyro-Compass early in the 20th Century, a new era was born . . . an era that made navigation an exact science. While great improvements had been made in magnetic compasses and sextants, for the first time navigators had in the Gyro-Compass a *true-north*

seeking direction indicator free from the disturbing influences of electrical storms, ship's magnetism, variation and deviation due to local attraction.

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Today, this group of three Sperry instruments—with their complementary auxiliaries—provides a vessel with a modern means of making navigation safer, simpler and more efficient.

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same ground as the GMST for promotion to sergeant and staff sergeant.

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Write your questions to: The Director, Extension School, Marine Corps Schools, Quantico, Virginia

listed by the colonel, is the fact that the approximate rate of reenlistments in the Corps is an almost unbelievable 60 per cent. This figure was noted in a recent national publication and is assumed to be correct. Needless to say, the percentage of reenlistments among inductees serving in the Corps will not be nearly as high.

Truly volunteer recruiting is the answer for a stronger and happier Marine Corps at less cost to the individual taxpayer. My congratulations to LtCol Cereghino for his factual report on *Volunteers vs. Inductees*.

PAUL F. YOE,
TSgt, USMC
Amarillo, Tex.

Precious Seconds Lost . . .

I am writing this letter in regards to a letter to the Editor in a recent issue of the **Marine Corps Gazette**.

The letter I'm referring to was written by Maj Warren F. Lloyd, for MSgt William J. Yanovitch, who recommended a solution for the shortage of ID tags.

I agree wholeheartedly with him but also attention must be brought to the improper way some of these present ID tags have been made out.

In my short experience of taking care of wounded, I have found that precious seconds have been lost trying to get the right information for the emergency medical tags. Many times the surname, middle name, first name, type blood, and

religion have been incorrect.

As these tags and the information on them are necessary and invaluable to the doctor who gives secondary treatment to the wounded, I am sure you can understand why ID tags should be correct.

Also I would like to mention here, often the information on the emergency medical tag is used as a pony for telegrams to next-of-kin; and if the ID tags are incorrect, the medical tags are also incorrect, which makes the telegrams wrong.

I am sure that others feel the same as I do in this matter.

JOHN N. VINTELIA,
HM3, USNR
Korea

Worth All Effort . . .

I see your magazine each month and think it is a very good one. I enjoy reading it and it's worth all effort put forth to publish it, I'm sure. At present I see it through Special Services, but I intend to subscribe for it when I come back to the States.

Please send me the set of six (6) pictures for \$.50 that was advertised in the **GAZETTE**. I assume that it is the set for \$.50 instead of \$.50 each.

WILLIAM T. OAKES,
Cpl, USMC
Korea

ED: Fifty cents for the set of six four-color prints is correct. You should have them by now.



THE SHOES illustrated above have been officially approved by the permanent Marine Corps Uniform Board, "after a careful and detailed inspection". Ask to see them at your Exchange. They sell at popular prices!

KNIPE BROS., INC., Ward Hill, Mass.
For over 69 years makers of fine shoes for men

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Notes on Our Authors



"Inuit" Knew How, page 36, is the cooperative work of two General Supply Branch officers. Maj Vernon D. Boyd (left) joined the ranks in 1927, was commissioned in 1943. His cold weather experience dates back to 1933—11 missions in the arctic and four missions in the antarctic, some of

them covering two consecutive years in the same area. Maj Boyd holds the Byrd Antarctic Expedition and the U. S. Antarctic Service awards. As a veteran of the first winter in Korea and having helped develop the insulated boot he writes about, he shares an authoritative touch with LtCol Gordon A. Hardwick (right) who graduated from the University of Minnesota in 1939, the Basic School in 1940, and the Amphibious Warfare School, Senior Course, 1950. Col Hardwick's duties have varied from sea duty in 1940, with "normal tours through the islands," to his present assignment. In 1951 he was a member of the Arctic Test Detachment, Fort Churchill, Manitoba, Canada, and has been instrumental in the development of much of the cold weather clothing worn by Marines today.

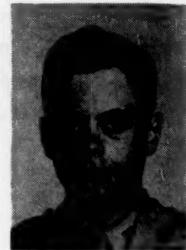


Capt Ralph C. Wood is the author of *Pickel Meadows*, page 18, which acquaints the reader with the Marine Corps' systematic cold weather training of all replacements shipping out for Korea. Wood now is public information officer with the Western Recruiting Area. He entered the ranks of

the Corps in March 1943, was commissioned in 1945, and has served in various assignments from motor transport to artillery.

LtCol John J. Wade, Jr., who makes a pitch for the 8-inch howitzer in *The Sunday Punch*, page 30, is an artilleryman presently on duty with the Ordnance Branch, G-4, HQMC. During WW II he served with the 10th Marines, the 13th Marines, and at Hqs, FMF Pac. The colonel is a graduate of the University of California, the 5th ROC, Base

Defense Weapons Course (artillery), and the Artillery School, Fort Sill, 1946.



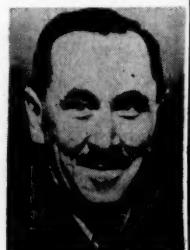
The Commander's Voice, page 38, was written by Capt Frederick D. Singer who ran communications for the 1st Bn, 1st Marines in Korea. After entering the Marine Corps in 1943, Capt Singer successfully completed the Platoon Commander's School, the Transport Quartermaster School, Naval Justice School, and the Communications Officers' School. Before Korea he served at the Brooklyn Navy Yard, at sea as CO of a Marine detachment, and with the 2d Mar Div. Capt Singer is now an instructor with the Signal School Battalion, MCRD, San Diego.

LtCol Robert E. Collier advises Marines—*Use Your Eyes*—in his article, page 42. A Texan by birth, the colonel graduated from Texas A&M in 1939. He has since completed six service schools. During World War II he served with the 1st Marine



Division and the 1st 155mm Artillery Battalion. He later was Director of the Air Observer School (1947-48), and saw duty with the 2d Mar Div. At this reading he is Executive Officer, Marine Barracks, USNB, Pearl Harbor.

A frequent contributor to the GAZETTE, Maj Philip N. Pierce wrote *Teach The Teachers*, page 26. Maj Pierce is an artilleryman with experience at Saipan, Tinian, the Marshalls, Iwo, and Korea. A graduate of the University of Maine, he is currently CO of the artillery demonstration unit, MCS, Quantico, Va.



Lynn Montross tells the story of Marine tanks in this issue, page 46. As a writer for the Historical Branch, Headquarters Marine Corps, Montross began the Korean series in July last year, may set a record for GAZETTE bylines.

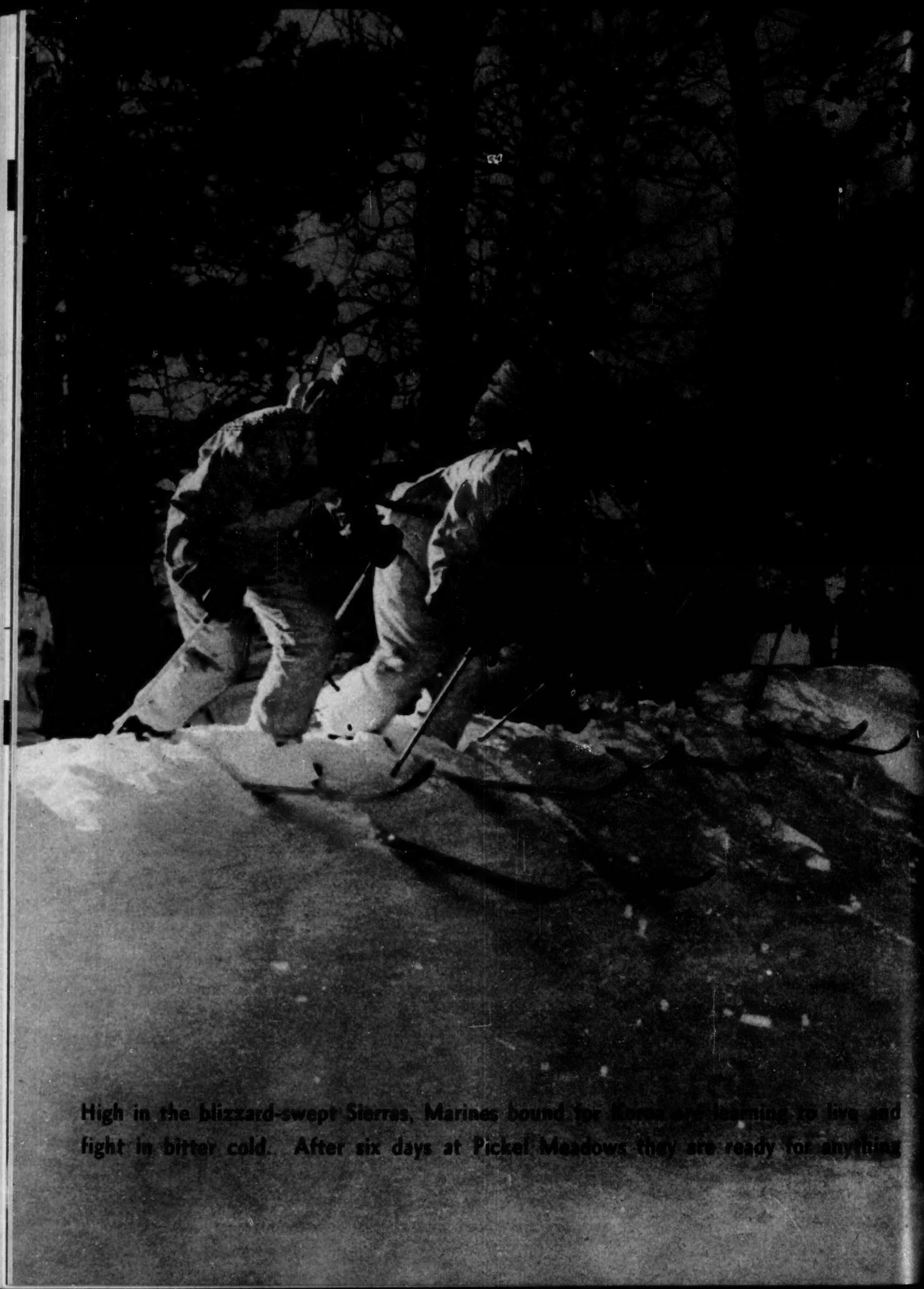


Corsairs Join the French Navy

Glistening new Corsairs wearing the anchor and tri-color insignia of the French Navy are rolling off production lines at Chance Vought Aircraft in Dallas, Texas. They are F4U-7 Corsairs, now being built in quantity for the French Government under the Mutual Defense Assistance Program.

France is getting America's number one piston engined fighter-bomber in the F4U-7. It is similar to the F4U-4 Corsair, but, like the AU-1 Corsair currently in production for the U. S. Marine Corps, carries heavier armor and armament. Other Corsair models have flown thousands of vital missions in Korea.

Chance Vought Aircraft. DALLAS, TEXAS
ONE OF THE FOUR DIVISIONS OF UNITED AIRCRAFT CORPORATION



High in the blizzard-swept Sierras, Marines bound for Korea are learning to live and fight in bitter cold. After six days at Pickel Meadows they are ready for anything.

Pickel Meadows

By Capt Ralph C. Wood

ILLUSTRATED BY CPL ROY THOMPSEN

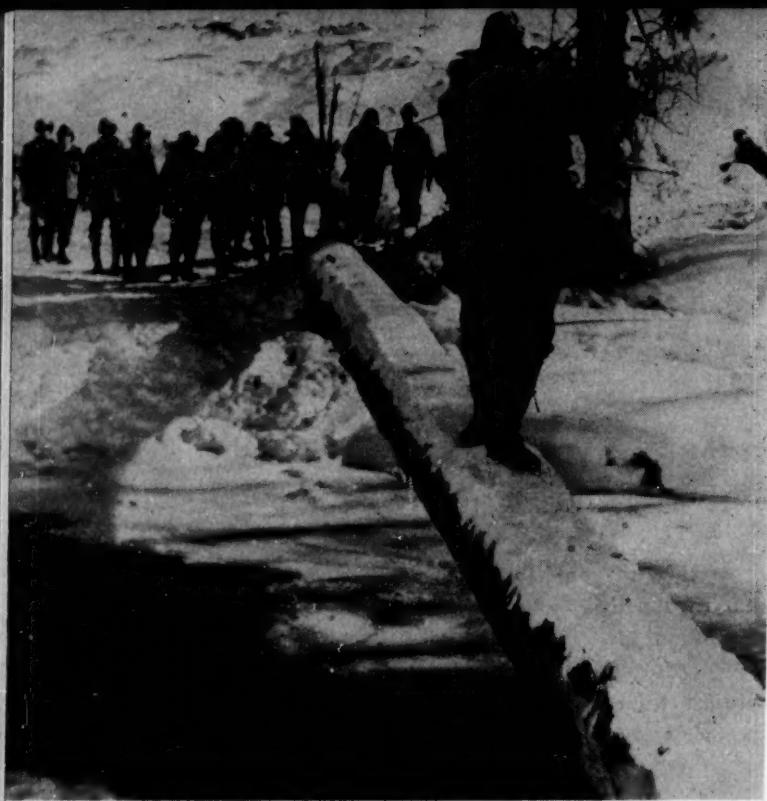
“NOBODY CAN FIGHT IN BITTER COLD, BUT THOSE COMMIES NEVER GOT the word. As long as they do it, we'll just have to learn.” That's the outlook of the instructors and men at the Marine Corps' Cold Weather Training Camp at Pickel Meadows, California. High in the Sierra Mountains of California, where the bottom drops out of the thermometer, these men are teaching Korea replacements how to do just that — live and fight in bitter cold.

It takes little imagination to figure the “why” of this training. Many problems in tactics, logistics, and equipment were met in Korea during the last two winters, and many of them were solved, but the major problem still remains — that of the man himself. He must be taught to take care of himself in sub-zero weather or all his other training will be of no avail. This means that each man must be trained individually.

The Training and Replacement Command of Camp Pendleton started cold weather training soon after the outbreak of hostilities in Korea through the organization of the Cold Weather Battalion under LtCol Donald B. Hubbard. From lectures and movies, the training schedule progressed until it included the first cold weather camp at Big Bear Mountain in southern California. The Fourth Replacement Draft was the lone benefactor of this camp as the combination of private landowners, skiers, and lack of cold proved too much. In time for the Fifth Replacement Draft, the camp had been moved to Idyllwild in the San Jacinto Mountains. The same distractions were prevalent here to a lesser degree, but the camp lasted throughout the winter.

During the summer of 1951, a reconnaissance party was sent into the Sierra Mountains to search for a new camp site. After scouring the territory from Lake Tahoe to Yosemite National Park, the Pickel Meadows location was selected. Located about 20 miles north of Bridgeport, California, this area features terrain very similar to that found in Korea, only worse. The altitude is higher, the hills are sharper, the snow is deeper, and the cold is colder. The altitude goes up to 10,000 feet and the mercury goes down to 48° below. The natives of that area say it is impossible to spend the winter there, but the Cold Weather Battalion is proving them wrong.

LtCol Hubbard and his staff arrived at the campsite on 7 September 1951 to set up their base camp. Two weeks later the first group of trainees



You can literally flunk this course cold

began to arrive. The base camp was far from completed at that time. In fact, it still has only a few scattered wooden buildings for administrative offices and about 50 tents for quarters.

Ideal temperature for this training ranges from 20° below at night to 10° to 20° above during the day. Pickel Meadows averages a similar, if not larger range. This forces the trainee to remove clothing during the day and put it back on at night—thus applying the layer principle. It also teaches him the danger of getting his clothes and his body wet with perspiration.

ONE OF THE FREQUENTLY heard obstacles to applying the rules of cold weather clothing is that it all depends on what the enemy happens to be doing. This is taken care of at Pickel Meadows in the form of a white-clad Aggressor platoon which makes a formidable enemy for the trainees. The Aggressors maintain their own isolated camp in the foothills several miles across the basin from the base camp. (Incidentally, they boast of the only known man in the Marine Corps who had to ski 12 miles to reenlist. When Sgt W. E. Bowman's hitch was up, the Aggressor camp was completely snowed in. He strapped on his pack, skied down to the main camp to sign up for six years, and then went on liberty in Reno to celebrate.)

The trainee's cold weather indoctrination actually begins at Camp Pendleton where he sees movies, hears lectures, and sees demonstrations of clothing. This indoctrination is not so much on what to do, but on what will happen if you don't do the right thing. A man pulling

off a frostbitten toe is a startling sight. The trainee is also issued cold weather clothing, including the new rubber insulated boot, with instructions on its use. With temperatures around 60° and 70°, however, it is hard to make this training stick.

The trainee arrives at Pickel Meadows around noon after a 12-hour ride via commercial bus from Pendleton. For six days and nights he lives out of the pack on his back. He sleeps in a mountain sleeping bag in a shelter-half on a snow-covered slope.

The first two days are spent in the initial bivouac while instructors teach the trainees the basic fundamentals of living in cold weather. The training includes care and cleaning of weapons, building shelters, preparation of frozen rations, stream crossing, and making water from snow. The earlier instruction on the use of cold weather clothing has more effect now that the temperature is 20° below. Even the routine duties take on a new aspect because of the cold weather, and as a result the trainee learns something with every move.

On the morning of the third day the trainees are issued four days' C-rations and break camp to begin a four-day 15-mile training course. During these four days the trainees make a three to four-mile tactical march each day, bivouacking in a new location each night. The emphasis is on the individual, his movement, his care, and his clothing. Each man must be trained to move slowly and deliberately in order to conserve energy at the high altitude and to stay cool in order not to perspire.

Freezing, floundering trainees are ripe for ambush



During the entire four days of this rugged course, the trainees are constantly harassed by the Aggressors. The Aggressor platoon commander, a veteran of Korea, makes up most of his situations exactly as they confronted him as a platoon commander in Korea. Realism is of prime importance for effectiveness of the training. Night attacks are a common occurrence. The Aggressors are taught a few words of Chinese and when they are captured they only speak these few words. Any interrogation or instructions must be done by signs and motions.

The Aggressors are equipped with skis and snowshoes and have become quite adept in their use. They constitute a highly mobile striking force when compared with the floundering trainees wearing "Mickey Mouse" boots in knee-deep snow. With white suits camouflaging their regular clothing, Aggressors swoop down from above a column of trainees in a flanking attack. The first day the trainees, more concerned with how to keep from freezing, are startled by these attacks. By the second and third days, however, they begin to forget the cold and are seldom taken by surprise again.

At night, typical Chinese Communist tactics are employed by the Aggressors. Attacks are accompanied by bugles, whistles, and fanatical yells. Sentries are taunted into giving away their positions so the Aggressors can infiltrate through their lines and steal trigger-housing groups, foul the weapons, and otherwise harass the trainees. The trainee may know that he is not going to be shot at, but he is still put through all the other personal hardships of combat. He is routed out of his sleeping bag in the middle of the night. If he is unlucky



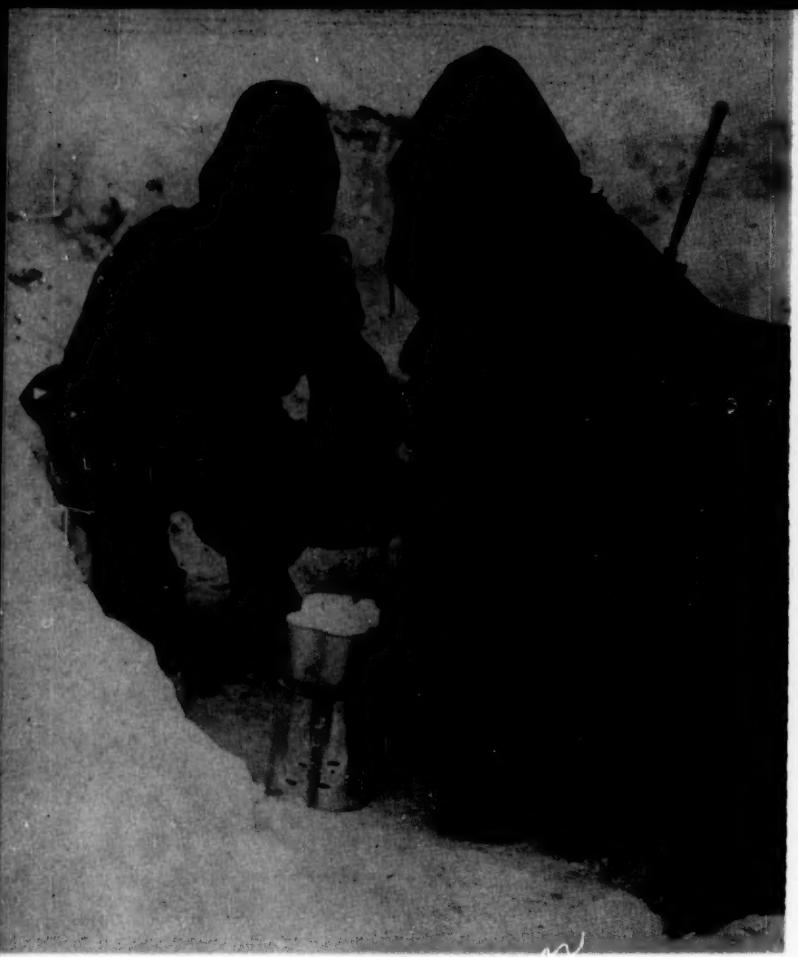
Aggressor soldiers

enough to get captured, he is in for a long night of questioning by his captors.

On the last day of training the men return to the starting point. They are physically exhausted. They know they have been through some of the roughest training in

Aggressor camp, Pickel Meadows





This is called "living with the elements"

the Marine Corps, but they now have confidence in their ability to take care of themselves in the coldest weather of Korea. They didn't like the training when they were sleeping out in the snow. But when they get to Korea,



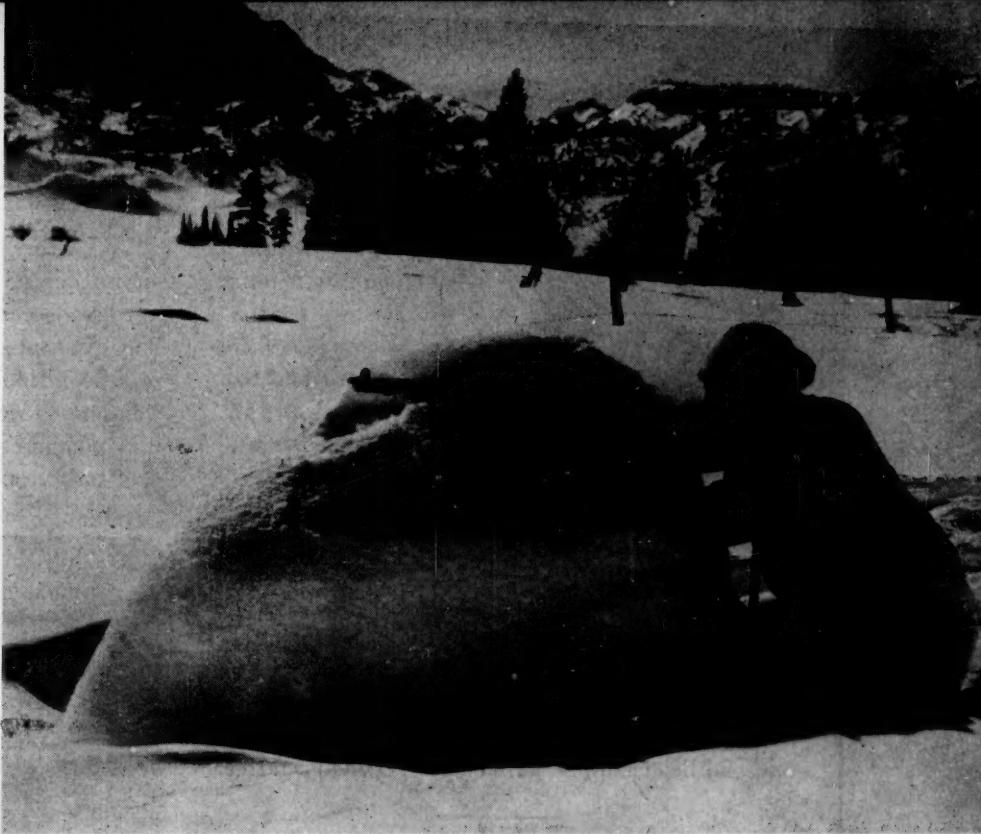
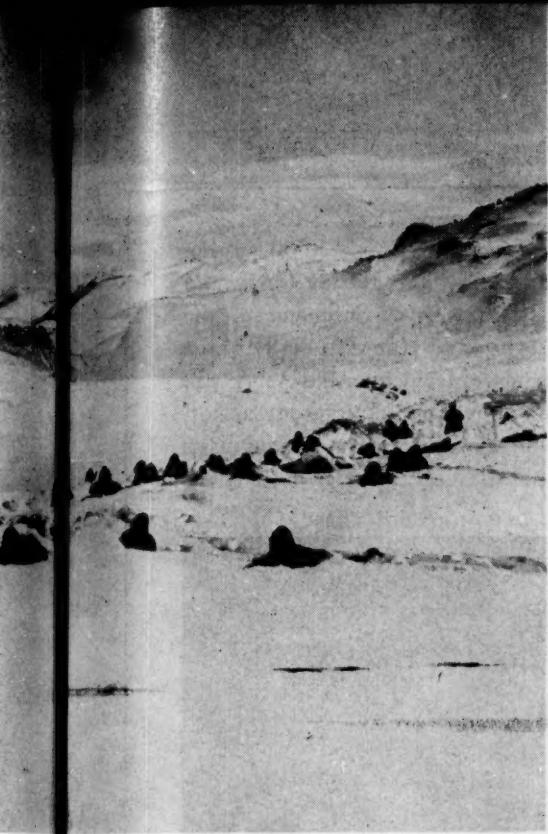
Trainees deploy to meet Aggressor attack

all will be thankful they went through it.

With the emphasis on individual training, Pickel Meadows may sound like a cold weather boot camp, but it isn't. For one thing, it is not confined to privates and privates first class. Every man going to Korea, including officers, doctors, corpsmen, and chaplains go through the cold weather training, and they all sleep in sleeping bags in the snow.

Base camp in sight! These men are no longer strangers to living and fighting in the snow





Some are in for a surprise

For once, the fly-boys are grounded and taught how the gravel-crunchers live. They do not follow the same training schedule as the replacements, but they are put through a rigorous practical exercise in survival in arctic climates. They are dropped in the snow at the same place with the other trainees and left there for two and a half days to "live with the elements."

Pickel Meadows can justify its existence as a leadership school without reference to the cold weather training. Here, with bitter cold and discomfort at their worst, leadership is a must. Experienced officers and noncommissioned officers who have been through the training at Pickel Meadows say they value the training they received in leadership more than anything else. If there is anything that will force leadership on a leader, it is the presence of human discomforts—and the high Sierras are full of them.

THE EFFECTIVENESS OF the training at Pickel Meadows can't be documented in round numbers, but it can be seen in the quality of the replacements going to Korea. There are no longer any instances of a Marine seeing his first snow and his first Chinese Communist simultaneously. Stories from Korea have it that fresh replacements are telling hardened frontline troops, "Don't try to snow us on how tough it is out here. We've just been through Pickel Meadows!"

Last winter approximately 20,000 men went through the training, and again this winter all replacement drafts will spend six days in the Sierras before loading out for

Korea. In addition, Fleet Marine Force Pacific is planning to conduct two battalion field exercises at Pickel Meadows around the first of the year. All of which indicates that Pickel Meadows is here to stay so long as Marines are likely to do any cold-weather fighting.

USMC



In Brief



Olympic Decathlon champion Bob Mathias (left) has just returned from Helsinki, where he duplicated his 1948 victory in London. Mathias is the first athlete in Olympic history to win this grueling event twice. At Helsinki he scored 7887 points to break the world's record he set in July in

his home town, Tulare, Calif. Mathias is a senior in the Platoon Leaders Class at Stanford University. Next June, he reports for active duty as a Marine second lieutenant. Picture courtesy *Time* magazine.

A new device enabling amphibious forces to land equipment in areas where they cannot beach landing craft is under Navy test at Port Hueneme, Calif. The "Tramway" consists of cables that will stretch from a tower on shore to a vessel up to 500 feet from the beach, and will carry one ton of equipment on each trip. Meanwhile in Korea, Marines of Baker Co, 1st Eng Bn, solved the problem of spanning the wide Imjin river with a footbridge 746 feet long, said to be the longest military footbridge in the world.

The Army has decided to buy 25,000 of the armored vests developed by the Marine Corps and used so successfully in Korea. Shipment of the fiberglass-plated vests to Army troops in the Far East will begin immediately. Meanwhile, the Army will continue to work on its own variety of body armor. But purchases of these will be on a limited basis and for experimental use only, the Defense Department says.

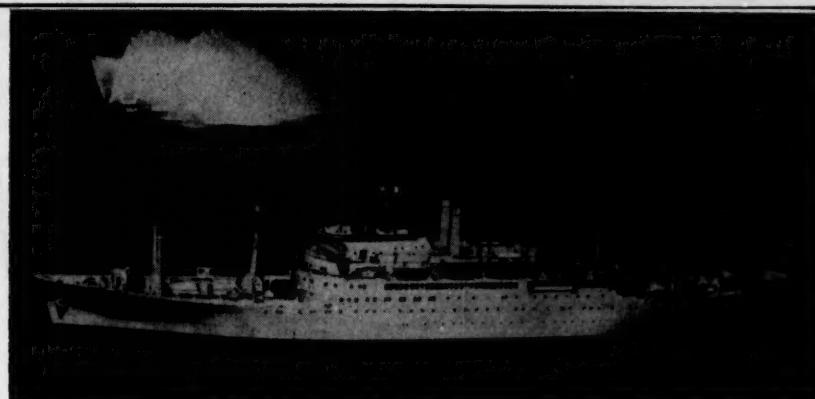


The Gloster Javelin (above), deadly Allied air defense against atomic bombers, swoops over the English countryside at a secret supersonic speed. A delta-wing fighter, the Javelin keeps the British high among the world's best designers of jet craft. It is powered by two Sapphire engines and is a day-night, all-weather model with radar equipment. Photo courtesy British Information Service.



Making a two-month tour of Marine Corps installations is Col Pieter J. Van Gijn, next Commandant of The Netherlands Marines, being greeted (left) by LtGen Thomas in Washington. A decorated veteran of Indonesia, Curacao, and Rotterdam fighting, Col Van Gijn will become General Major of Dutch Marines next year. The Nazis captured him in the Holland invasion, kept him captive five years. In 1948 he became commander of the Marine Barracks at Rotterdam. Dutch Marines trained here in WW II, adopted many U. S. Marine features including the uniform.

The USNS Barrett, deluxe version of a converted troop transport (right), will give U. S. servicemen an air-conditioned ride between America and points abroad. Originally slated for the American President Lines, the *Barrett* was launched three days after the Korean war started as the *SS President Jackson*. Her later conversion kept intact such niceties as a barber shop, soda fountain, library, lounges, complete miniature hospital, and a nursery for dependent children. The vessel can accommodate 1,500 men. She is 533 feet long and capable of cruising at 19 knots.



The sleek new jeep (right), developed by Army Ordnance, is now in mass production. The new jeep has more power, greater cruising range, rides better, and costs less than its predecessors. A 72-horsepower engine is now employed, under a slightly raised hood. The body has been lengthened and widened to facilitate maintenance of the vehicle. Streamlined fenders not only create a smarter appearance, but serve more effectively as mud guards. A splash-proof ignition system has been added for shallow-water operations. The new jeep is expected to be available to Marine Corps units in the near future.

Another military pay increase to meet the still-rising cost of living is expected to be sought by the Defense Department when Congress convenes in January. Assistant Secretary of Defense Rosenberg contends the recent 4-per cent pay boost does not match the 12-per cent cost-of-living increase since the year 1950.

The Marine Corps has ordered a midget helicopter, weighing only 360 pounds, from Hiller Helicopters of Palo Alto, Calif. The little two-place 'copter (left), named the "Hornet," will be powered by a small ram-jet engine on the tip of each of two rotor blades. It can carry a load of 600 pounds at a speed of 80 mph. The Hornet will be tested by the Corps at MCAS, Quantico, this coming year.





Teach the Teachers!

By Maj Philip N. Pierce

IT IS HARD TO BELIEVE THAT THE SAME MEN WHO handle some of the newest machines known to science can still be satisfied with using skills that haven't shown any real improvement since Ben Franklin wrote *Poor Richard's Almanac*. The skills in question are those used in the every-day occupation of teaching school.

Why should you be interested in school teaching? The answer to that question is pretty obvious as long as you

wear the insignia of rank on your collar or stripes on your sleeve. But, just to lend a little strength to our stand on this matter, let's have a look at some important figures.

Studies have shown that a Marine Corps officer spends an average of 75 per cent of his time in instructional work of one sort or another. Career planning for a Marine officer is based on 30 years' active duty. Simple arithmetic will show he can expect to devote a total of



6,211 days to teaching. Studies also show that the average line NCO spends 63 per cent of his time in the Corps in an instructional role.

Based on these facts, it is obvious that a great many Marines should be professionally equipped to teach school. Take a look around your outfit. How many individuals do you honestly consider capable instructors? How many of them are giving instruction of some sort? The two answers don't balance very well, do they?

Let's look at another angle. Think of the smartest man you ever knew. How much do you think he knows, compared to how much he is capable of learning? It may

want to be different about it, it is more seconds than the sun has existed.

The purpose of these fantastic figures is merely to point out that the average human can become a pretty smart fellow *provided*, of course, he wants and has the chance to learn. The obvious answer to the problem is to provide a time, a place, and a teacher. The time and the place are easy, but that teacher! Ah, there's the rub.

How do we go about getting a teacher? Well, generally it goes something like this. The book says we've got to have instruction in scouting and patrolling. Who is going to teach it? Let's see . . . Lieutenant Smith . . . just the



surprise you to learn that he knows somewhere between 2 and 20 per cent of his capacity, the average being about 11 per cent. Not very much is it?

• **HOW MUCH CAN AN AVERAGE MAN learn?** Well, there is some disagreement on the exact answer, but we easily can arrive at an average answer. Everything a man does is controlled by nerve cells, called neurons. The disagreement arises in the estimates of just how many neurons there are in the human body. These estimates range anywhere from a low of 9 billion to a high of 14 billion. Taking 11 billion as an average, the potentialities of the nervous system are the total possible combinations in 11 billion! Since that isn't much of an answer, let's break it down a little further. For the mathematicians among us, the total possible potential in 11 billion is 10 raised to the 2,783,000th power. For those of us who have trouble with grocery store arithmetic, it represents more atoms than there are in the universe. Or, if you

man for the job . . . lots of experience . . . spent two years in a recon outfit . . . really knows his stuff.

Yes, Smitty may know his stuff and have a world of experience, but we forgot to ask ourselves several pretty important questions. What, if anything, does Smitty know about teaching? Can he get the dope across to the troops? And, most important of all, can he make the men *want* to learn what he is teaching?

You see, the trouble is that we tried to solve our problem by starting in the middle rather than at the beginning. The place we should have started to solve our problem was with Smitty. Somewhere along the line we should have made certain that a man with his experience and background was able to put across to others his tremendous store of valuable knowledge. Someone should have told Smitty how to provide his students with the will to learn. Neither Smitty, nor any other instructor, can teach a man anything. All they can hope to do is make a man *want* to learn and give him the material. The man

will have to teach himself.

Well, there is our problem. What are we going to do about it? What can we do about it?

At the Marine Corps Schools in Quantico the need for teaching teachers is recognized to the extent that a formal course is offered under the heading Instructors Orientation Course. It is also worthy of note that the IOC is one of the most popular and best liked courses offered at the schools. This course, however, is designed primarily to provide a background for officers who are assigned as instructors at Marine Corps Schools. It is regrettable that comparatively few individuals ever receive the benefits of the full length course of instruction offered by the IOC.

In addition, this same IOC offers short courses to most of the other schools at Quantico. Since these must be squeezed into already crowded schedules in most cases, the best that can be hoped for is to merely expose the students to a few broad principles of good instruction.

Getting away from the big picture for a moment, let us examine the problem from the standpoint of the smaller unit. Marine Corps General Order No. 83 stresses the need for improving our instruction on the small unit level. Item 36 on the Individual Training Record Card also points this out. Yet, how is instruction in the subject of the Technique of Instruction handled? Most of the time we find whoever happens to be available, who isn't qualified himself, giving the men a two-hour lecture on how to be an instructor.

THE TOTAL WORTH OF a lecture on how to be an instructor can be easily evaluated by comparison with the following figures, which educators and psychologists agree to be reliably accurate. Man learns through three processes: being told, being shown, and performing. These three processes are those which utilize the main sensory channels to the mind: hearing, sight, and touch.

Since we are interested mainly in the student remembering what he learns, let us see how these three methods stack up in that respect. Again, of necessity, these figures represent the average human being. Men remember approximately 10 per cent of what they are told. They retain about 50 per cent of what they are shown, and they retain 90 per cent of the skills and knowledge which they acquire through performance. The case for the plain old lecture, which represents over 60 per cent of all the instruction in the Marine Corps over any given period, is indeed a pretty poor one.

Several smaller units throughout the Marine Corps have taken a realistic approach to the problem. As a case in point, we cite the example of the Schools Demonstration Troops at Marine Corps Schools, Quantico, which at this writing is approximately the size of a battalion.

At present, Schools Troops is conducting an NCO In-

structors Orientation Course. Hopes are to graduate every NCO in the unit from the school. The reaction to the school is not only interesting, but extremely heartening. At the end of each course, a questionnaire is given to each member of the class. The object is twofold: to ask for suggestions on how the course may be improved, and to find out exactly what the NCOs think about the value of such training. In order to make sure that frank and honest opinions are received, the students are not required to sign the questionnaires, nor are they required to identify themselves in any way. To date not a solitary answer has been received which did not express enthusiasm for the course.

THIS PARTICULAR COURSE is of two weeks' duration, and includes a total of 88 hours of instruction. Experience has shown that classes which include between 12 and 15 students are the ideal size to receive maximum benefit from the course. Of the 88 hours of instruction, approximately 75 hours are spent in student performance. Performance, you will recall from our previous figures, is the method by which humans remember 90 per cent of what they've been taught.

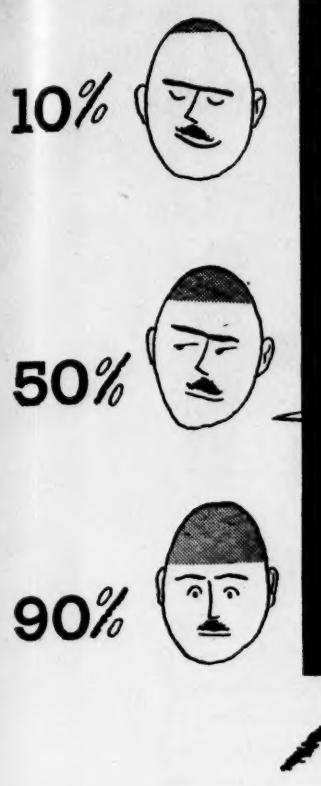
In the interest of encouraging other units to establish a well balanced school in the technique of instruction, the following schedule for such a school is hopefully offered. It is a copy of a schedule of the NCO Instructors Orientation Course currently being offered by Schools Demonstration Troops; one which has proved to be sound through actual experiment.

FIRST WEEK

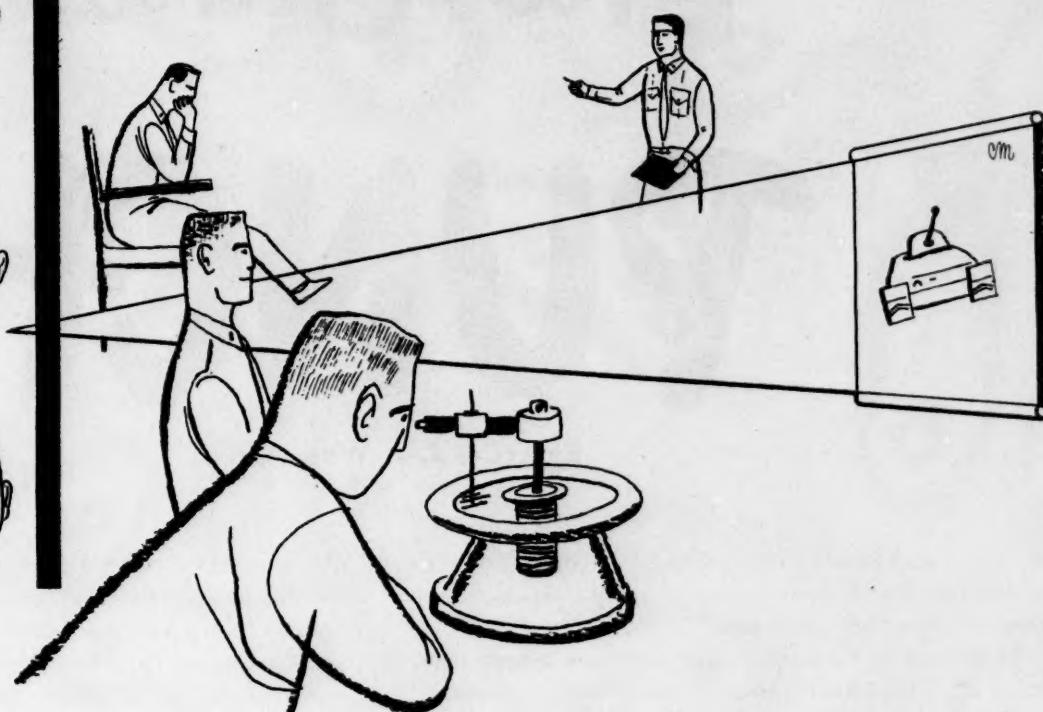
Monday:	0800-0830 Introduction to Course 0830-1200 Principles of Instruction 1300-1400 Critiques 1400-1700 1st Five-Minute Presentation (Gadget Talk)
Tuesday:	0800-1000 Preparation of a Lesson 1000-1200 Training Aids 1300-1700 Student Preparation Time
Wednesday:	0800-1000 Application 1000-1100 Lectures and Effective Speech 1100-1200 Technique of Retention 1300-1700 2d Five-Minute Presentation
Thursday:	0800-1200 Student Preparation Time 1300-1700 3d Five-Minute Presentation
Friday:	0800-1200 Student Preparation Time 1300-1700 10-Minute Presentation
Saturday:	0800-1200 10-Minute Presentation

SECOND WEEK

Monday:	0800-1200 Student Preparation Time 1300-1700 20-Minute Presentation
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You Learn by Doing



Tuesday: 0800-1200 20-Minute Presentation
 1300-1700 Student Preparation Time
 Wednesday: 0800-1200 Student Preparation Time
 1300-1700 Student Preparation Time
 Thursday: 0800-1200 50-Minute Presentation
 1300-1700 50-Minute Presentation
 Friday: 0800-1200 50-Minute Presentation
 1300-1700 50-Minute Presentation
 Saturday: 0800-1100 50-Minute Presentation
 1100-1200 Graduation

Notice that by far the largest proportion of time is devoted to actual lesson preparation and individual presentations by the students. Each student is required to teach a total of six periods during the course of instruction. Herein lies the real value of this course, based again on the premise that a student learns best by actually doing. Obviously the best way to instruct a teacher is by requiring him to teach and then correcting his mistakes. The policy in this particular course is to have the other students make most of the corrections and offer constructive criticism to their fellow students. In this way the students who correct the mistakes are also performing, in that they must apply the principles of critiques, discussions, and instructor-student relationships which are an integral part of their course of instruction.

The first of these student presentations is known as the "Gadget Talk," so-called because the student is asked to explain or demonstrate some gadget of his own choosing.

This is used more or less as an "ice-breaker," and gives the student a chance to get up in front of a critical audience and attempt to put across his ideas to them.

♦ THE SECOND FIVE-MINUTE presentation, and those which follow it, are more formal in nature. In each case the student is required to submit a completed lesson plan, including preparation data and a comprehensive lesson outline. Again the subject is of his own choosing, the only restriction being that it be a subject of military nature. The student is then required to teach his selected subject to the class. At the conclusion of his presentation, other students are selected at random from the class to criticize his performance, pointing out both the good as well as the bad features, and suggesting how the individual may make his next talk more effective. In this manner the shortcomings of the individual are brought to his attention, and helpful suggestions are offered in order that he may concentrate on those points in which he appears to be weakest.

So much for the cause of teaching the teachers. The wisdom of this course of action is probably best expressed in the words of Khalil Gibran, who once wrote, "*The teacher who walks in the shadow of the temple, among his followers, gives not of his wisdom but rather of his faith. If he is indeed wise he does not bid you enter the house of his wisdom, but rather leads you to the threshold of your own mind. . .*" USMC

The Sunday PUNCH

By LtCol J. J. Wade, Jr.

“... AND FINALLY I DISCUSSED WITH YOU THE TYPES of fuzes used with these various artillery weapons. Are there any questions, gentlemen?”

In the rear of the Basic School classroom a lieutenant stood up. “I’m afraid I misunderstood one of your statements, sir. It seems to me you said our medium artillery fires a shell weighing 95 pounds, and later on you also said our heavy artillery fires a shell weighing 95 pounds. Which of these figures is correct?”

“Why, they’re both correct,” the major answered. “Both the 155 howitzer and the 155 gun fire a projectile of the same weight. Does that answer your question?”

“Well, I don’t know, sir. It would seem more logical if the heavy artillery fired a projectile which would be at least a little bit heavier than the medium. Isn’t there any difference between the two shells?”

“Certainly there’s a difference,” the instructor replied. “The 155 gun has a wider rotating band.”

“Does that give it more of a Sunday punch than the howitzer?”

“Let’s not fight the problem, Lieutenant,” shot back the instructor with a trace of impatience in his voice. “The weight classification applies primarily to the piece itself, as well as to range and muzzle velocity, as I pointed out earlier.”

“Suppose I put it this way, sir—if I were a North Korean sitting in a foxhole on a reverse slope which is within range of both medium and heavy Marine artillery, and both of them were shooting time fire or ricocheted air bursts at me, I wouldn’t be able to tell the difference, would I?”

“Certainly! You could hear the crack of the ballistic wave created by the gun projectile as it travels at much higher speed than that from the howitzer,” he snapped.

As he noticed the red flush spreading over the instructor’s face, the lieutenant refrained from asking whether the bang or the wider rotating band would produce any greater number of casualties. Instead, he sat down, mumbling vaguely to his neighbors that both should be called medium artillery, or that possibly one might be called long-range medium artillery.

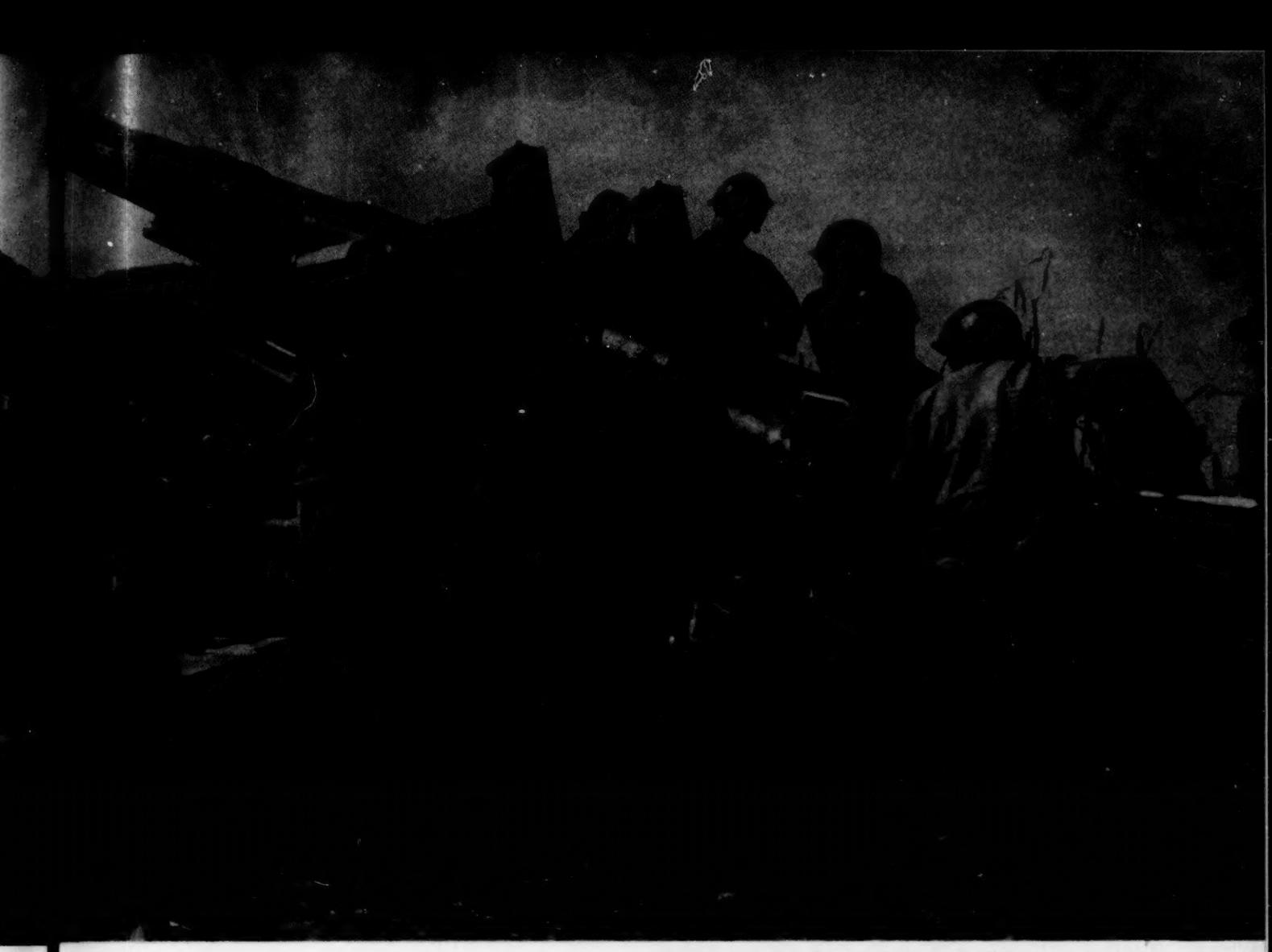
Not wishing to find himself at the identical disadvantage on a later occasion, the major was still pondering the significance of the student’s question as he drove back to his office.

Sitting down at his desk he turned to Capt Jim Smith, the genial infantry instructor who shared his office. “Say, Jim, do you realize that at the business end of the trajectory, there’s not a hell of a lot of difference between our medium and heavy artillery if you discount range and penetration?”

“Huh?” Jim looked up blankly. “That’s the trouble with you artillery people. Always talking about technical stuff when all I’m interested in is what kind of job your shells are doing out in front of my rifle company. But what brings on this hot scoop?”

“A student over at Basic School stopped me cold with that a few minutes ago, and I was almost forced to admit

What we need, says this artillery officer, is more punch than the FMF’s 155mm guns give us. He makes his solution sound easy



that there's no practical difference between the two if they're both shooting at you."

After some deliberation Jim said, "Maybe the youngster has something there. I remember back a few years when the pack howitzer was the standard direct support weapon. In those days the old French-designed 155 was considered real heavy artillery, and that was quite a piece of equipment to haul ashore during between-wars fleet landing exercises."

"You're dead right," said the major. "In the early stages of the last war we dropped the 155 Schneider, in favor of the 105 howitzer, as the general support weapon for a Marine division. Even though the ordnance experts didn't refer to them as such, we had at that time some progression in our artillery family. We had a 75 millimeter, a 105mm howitzer, and a 155mm gun, which might have been considered as light, medium, and heavy for our purposes. After Iwo Jima the Marine Corps began to appreciate the need for a revision in our artillery values. We switched to 105s as light direct-support artillery and adopted the 155mm M1 howitzer for the fourth battalion

in division general support."

"And as an infantryman, I'd say that was progress," said Jim.

"That's right," the major declared. "That gave us up-to-date light and medium artillery in the division. But before that the defense battalions had been armed with M1, 155 guns to replace their old 5-inch. Then they were shifted into corps artillery. Seems as though our light and medium weapons progressed to the point where the medium caught up with our heavy."

"That makes sense. And if that large Purple force advancing astride US 1 has all the artillery it's alleged to have, it's a wonder to me that somebody hasn't done something about it long before this." Jim pushed back his chair. "Let's get a cup of coffee while we figure it out."

The major was silent until his coffee had been well stirred. Then he began, "Jim, the Marine Corps has always been on its toes to get the right tool to perform any job that needs doing. Look at the dive-bomber, the LVT, the helicopter, and the Energa AT grenade. We developed them and then we went all-out to find out how

to make the most practical use of them."

"But what's that got to do with an enemy who can't tell our medium from our heavy artillery?" Jim broke in.

"Just this—maybe we've been overlooking a bet for a good many years, or at least for as many years as the 8-inch howitzer has been around. There's an item that doesn't need any more developing. It's ready for us to take into action right now and it's the most accurate piece of artillery that has ever been built, bar none. Incidentally, it just happens to be classified as heavy artillery, and if we had it in our T/A, I wouldn't get in any more trouble with smart second lieutenants."

"Maybe you just put your finger on the biggest objection; it's too heavy for us to use on a landing," Jim said.

"Do you know how much it weighs?"

"Hell, no! I'm a gravel-cruncher. I've never seen one."

"Well, let me describe it to you. Let's start off with the 155 gun. Remove the traveling lock from the trails and throw it away."

"Wait a minute, Hugh. Refresh my memory on this traveling lock. Where's that located on the 155 gun?"

"That's the bulky metal triangle that rides with its base across the trails and with its apex holding up the breech when the gun is in traveling position."

"Yeah, now I recall it. Go on!"

"Next replace the barrel with an 8-inch howitzer barrel."

"Okay, I've got it so far. What next?"

"Jim, you've had it. Your mind's eye is now looking at an 8-inch howitzer. To get back to the question that started this—now that you've seen one, do you know how much it weighs?"

"Let's see, you threw away the traveling lock and swapped one tube for another. The weight can't have changed too much if it uses the identical carriage and recoil mechanism. My only conclusion is that the weight must be pretty close after the changeover."

"I picked up a dope sheet when we left the office. Let's see exactly what they weigh," Hugh said. "Here's the 155 gun—30,100 pounds. The 8-inch weighs 30,575 or 475 pounds more than the one we have. In a gross of 15 tons, that's not much, is it?"

"In a hasty calculation, Hugh, I'd say that the switch would increase the weight just a shade over one per cent. You've made your point in weight, but how about length?"

"Travel position would be the critical one there, Jim. In travel the 155 gun is 34 feet 4½ inches, while the 8-inch howitzer is an even 36 feet."

"That foot and a half will never cause an embarkation officer to lose any sleep. It surprises me, though, that the howitzer should be longer than the gun in its traveling



Winching the 155mm tube into position.

position. How come?"

"That's where the traveling lock comes into the picture, Jim. Remember when we threw it away and saved 170 pounds?"

"Oh, yeah. You need it on the gun when you pull the long tube back out of battery for travel. But what do you do with the 8-inch howitzer tube in travel?"

"Nothing. Since it's shorter, you just leave it in place. That brings up another advantage. When you go into position, you don't need five cannoneers wrestling the traveling lock off the trails and winching the tube forward into battery."

"That would save a lot of time and effort, Hugh. Besides, it would eliminate the reverse procedure if you had to displace in a hurry. Not a bad return on the addition of a foot and a half in length."

Both paused to sip their coffee. After a few moments Jim spoke up, "One of the lectures you give to Basic School concerns artillery logistics, and it seems to me you harp on the fact that getting ammo ashore constitutes a major problem. Right?"

"Sure," Hugh answered.

"Well, why complicate the problem by introducing heavier ammo? That stuff is going to continue to come across the beaches long after you get the guns ashore and will be a constant headache for the shore party and ammo people."

"Wait a minute, Jim. I could recommend we go back to pack howitzers across the board in order to simplify



... into a remote triangular-shaped traveling lock

ammo supply. But that wouldn't help in the target area. Let's look at this rationally."

"OK," Jim interrupted. "How much does an 8-inch shell weigh?"

"It tips the scales at 200 pounds, just about twice the weight of the 155 shell."

"Won't that double your present ammo tonnage for heavy artillery?" Jim asked.

"There are two good reasons why it won't. First, one 8-inch howitzer round is going to do a lot more damage than one 155 shell."

"OK, Hugh. I'll grant that. But you've got to get hits before they count."

"Which leads me to my second reason, which has to do with hit probability. Let's drink up our coffee and break out FM 6-40 to get to the bottom of this."

As they entered their office, Hugh picked up a dog-eared manual and thumbed through the pages.

"Here's what I'm looking for, Jim. Take a look at this example of how to compute the probable number of rounds required for one hit. The target is a bridge 40 by 10 yards at a range of 18,000 yards."

"Wait'll I see what factors they're considering."

"Here, see? It's based on both range probable error and deflection probable error." Hugh pointed out the columns of figures.

"I get it now. The 155 gun will probably require 16 rounds for one hit while the 8-inch howitzer would take only five. Say, boy, that's quite a difference, isn't it?"

"To get back to that matter of ammo tonnage, Jim—probability says one hit on that bridge with a 155 is going to take sixteen 95-pound shells or a bit over 1500 pounds of HE. Try an 8-inch and you can do the job with five 200 pounders for a total of 1000 pounds. How about that?"

"Well, Hugh, you're beginning to make a believer out of an infantryman. Hit for hit, you could reduce your overall ammo tonnage by one-third and still do a good job for my boys up front."

"Don't forget that saving comes only from getting the first hit on the target. Suppose that bridge is heavily reinforced, and you want to clear one span completely. You're going to have to hit it more than once. And you can be sure it's going to take fewer 200 pounders to clear it out than 95 pounders."

"Okay! No argument there. The 8-inch will take fewer rounds to get hits and fewer hits to do the job. That makes your estimate of one-third reduction in ammo tonnage seem conservative. The embarkation officers, shore party, and ammo platoons ought to vote for that."

"Sure, Jim. Remember a while back when you claimed the 8-inch was too heavy for the FMF to use in landing operations? You probably had in mind a monstrosity almost the size of 'Big Bertha.' If we parked an 8-inch howitzer in the middle of Barnett Avenue, I'd put money on the fact most people would identify it as a 155 gun!"

"Due to my recent re-education, I wouldn't take that bet. I'll back down on that 'too heavy' claim, too. And the main reason is because I can't guarantee all the targets on the beach will be light enough for the 155 to handle."

"I like to argue with a reasonable guy, Jim. And you're dead right about the danger in establishing some hypothetical limit on the power of our supporting weapons. There should be two standards of acceptance—one, can we get it ashore; and two, does it give us the maximum punch?"

"As you tell 'em at Basic School, corps artillery solved the first problem in World War II when it got 'Long Toms' ashore. That extra 475 pounds wouldn't keep the 8-inch off the beach."

"Well, I can recall a few occasions on Iwo when a Sunday punch would have come in mighty handy. The heaviest we had there was the 155 howitzer. The 155 guns didn't ever come along. The island was too short. And the flat gun trajectory gave rise to too much dead space beyond No. 1 Airfield. Lots of stubborn targets were deflated from naval gunfire as well. Brother, we would have given our right arm for a couple of 8-inch howitzers on that one!"

"Whoa, Hugh. Just for the sake of argument, there are a few die-hard points I'd like to bring up. Isn't there something to be said for standardization of equipment,

particularly from the point of view of spare parts and maintenance? Wouldn't you get away from that if we went in for the 8-inch?"

"Not so any ordnance officer would get gray hairs, Jim. The only new spare parts and accessories you'd need would be for the recoil and breech mechanisms. A tube is a tube and you replace it when it wears out. As far as your armorers are concerned, they probably know the 8-inch inside out already, even if they've never seen one. The technical manual on the 155 gun and the 8-inch howitzer are one and the same book. If they refer to it for 155 maintenance they'll also find how to do the same job on the 8-inch howitzer. From the recoil system down, the carriage is identical. You got any more objections to offer?"

"Yeah, Hugh. I've got an ace-in-the-hole I'm saving. But first I'd like a little more dope on this highly touted accuracy you've been claiming. How about it?"

"Let me break out the 8-inch firing table. I've got one somewhere." Hugh began pulling open desk drawers. "Here it is. Let's see—" He paused as he thumbed through the table. "In deflection the probable error in yards never does reach two digits."

"Wait a minute, friend. No artillery can be that hot."

"Okay, skeptic, here's the book. Look for yourself. The only time the deflection error gets as high as nine yards is when you've cranked the tube up into high angle fire. Here's Charge 7 at 18,510 yards. Your error is eight yards in deflection. It doesn't increase to nine until you decrease the range in high angle fire to 14,500, and after 83 seconds in the air the error is still nine yards."

"It's a good thing this chart is here or I never would have believed it. Maybe in another 10 years we'll have a guided missile almost that accurate."

"That's not all, Jim. In Charge 7, deflection error is zero out at 6,500 yards. It doesn't increase to two yards until the range is 10,700. That's the answer to a forward observer's prayer. It's proportionally the same down through the other charges."

"How about range error?"

"The only time the range probable error reaches 25 yards is in the last 75 yards, firing Charge 5, at a range of 12,975 yards. In Charge 7, the greatest range error is 20 yards, and it reaches that in the last 200 yards, at 18,300. That means you can shoot at a target 10 miles away and you'll probably be within 18 yards in range and six yards in deflection."

Just to clinch his point, the major broke out his 155 gun firing table and looked up the 10-mile range. "Here's 10 miles with the 155, Jim. The range error is 42 yards and it's nine in deflection. Let me try a little fast math—." He worked over a memo pad. "That makes the 155 at that range about 43 percent as accurate as the 8-

inch in range, and 66 percent as accurate in deflection. That backs up our earlier conclusion on reduction of overall ammo tonnage by upwards of 30 percent."

"Well, Hugh, I guess I'll have to also concede your point on accuracy. That's what we infantry people like plenty of." He paused a moment, "But I can see one big thing you've overlooked."

Hugh grinned. "Is this your ace-in-the-hole proof that the 8-inch isn't as good as the 155?"

"This is it—if you deep-six the 155 gun in favor of the 8-inch howitzer, you'll sacrifice 7,000 yards in range. That means our heavy artillery will shoot only to 18,500 yards instead of the 25,700 yards it reaches now." Jim leaned back in his chair and looked at Hugh.

"Wait a minute, Jim—don't jump at conclusions. I'd be the last one to recommend such a wholesale swap. I think it would be smart to swap some, but certainly not all. As you say, we can't completely sacrifice that range capability."

"Well, Hugh, what do you recommend then—maybe re-arm one 155 gun battalion in each FMF with 8-inch howitzers?"

"That might be feasible, but I don't think it would be the best solution. We never have been too heavy in gun battalions."

"Don't tell me you're going to suggest composite battalions?" Jim showed his amazement.

"That's exactly what I'm thinking. We have different weapons within a rifle squad, since that's what is required to do the job."

"But putting different weapons into the same artillery battalion isn't quite like swapping a rifle for a BAR. Think of the impact on ammo supply, on maintenance, and on the fire direction center!"

"Well, let's look at those angles, Jim. You've already agreed that using the 8-inch will cut the weight of ammo fired in destruction missions. It's a cinch the stuff won't get mixed up. No ammo man will mistake an 8-inch projectile for a 155. With fuzes maybe there's some opportunity for a mix-up, but that wouldn't be serious. Now, about maintenance. Remember, we agreed the armorer who's a hot-shot on the 155 gun probably knows the 8-inch inside out? The parts are identical, so they can be used to repair either carriage. The only peculiar items would be in the breech and recoil. That's not going to add much to maintenance spares in a gun outfit."

"Okay," said Jim. "I'll buy that. But what about fire direction? The FDC is complicated enough already without fouling it up further."

"Let's analyze the FDC. What would you have to change to accommodate an 8-inch battery? The horizontal control operator will still read and announce range

and deflection. That's the same no matter what weapon is firing. The vertical control operator may have to acquire a new graphical site table, but they work exactly alike. He'd probably have a gizmo figured out in a week which would eliminate all lost motion. That just leaves your computers. The gun battery computers carry on with no change. The 8-inch computer would simply manipulate an 8-inch slipstick instead of a 'Long Tom's.' Since he's working independently at that point, it affects nobody else. That looks as though the only physical changes are swapping a couple of slide rules."

"Now, I don't know, Hugh. Isn't your S-3 going to have to announce charge for the guns and charge for the hows as well?"

"Sure he will, but up 'til now it's never been a major decision for him to choose between normal and super-charge. He might as well get in the swing along with howitzer S-3s. He can easily learn the 8-inch charges."

"How about registration correction, and the like. How's your control operator going to keep track of two different weapons?"

"Let him keep the corrections for the guns, and the 8-inch computer can keep track of his own. That's not fatal."

"I could argue a few more points on procedure, but I'll have to admit it sounds okay. And, as you claim, it wouldn't require wholesale change in the FDC. Tell me this—how would you organize this dream battalion? Three 155 gun batteries to one 8-inch battery?"

"No, Jim. I doubt if the personnel squeeze would allow the addition of a fourth battery to each gun battalion. That would mean a one-third increase in battery overhead if you add a new unit. There is one way of doing it without reducing your 155 firepower at all, and also without increasing the administrative load."

"How do you propose to work that out?"

"The heavy 155 is the only artillery outfit with four guns per battery. Subtract two gun sections from Charlie Battery and add 'em to Able Battery. Subtract Charlie's remaining two and add them to Baker. Then add four 8-inch howitzer sections to Charlie Battery. The result



The 8-inch howitzer at work

is your original 12 guns arranged six to a battery with a full set of administrators ready, willing, and able to care for four 8-inch howitzer sections."

"Say, that isn't a bad solution," said Jim. "You'd still have all your 155 firepower at ranges beyond 18,500 yards. At ranges short of that you'd increase the weight of HE in a single battalion volley by 800 pounds, or almost 70 percent. In addition, you've got four 8-inch hows available for precision destruction of point targets. What a combination that would be for counter-battery!"

The major smiled. "Remember that Sunday punch you finally swung at me—about needing that last 7,000 yards of range out of the 155 guns? Well, you've still got it."

"Okay, Hugh. Don't rub it in. But just to go down fighting, let me suggest one last fly in the ointment—suppose you can't scrape up enough extra personnel to man four additional sections in each gun battalion?"

"In that case, why not just swap 8-inch tubes for the 155 tubes in Charlie Battery. We'd have a suitable compromise with no increase in personnel. The one-third cut in firepower beyond 18,500 yards would still be more than offset by a one-third increase short of that range, to say nothing of far greater accuracy."

"Well, I give up. I'm fresh out of objections to your 8-inch howitzer. I'm beginning to wish we had some."

"So do I, Jim. Let's go get some chow." US MC

"Inuit" knew how



Inuit knew how, but it took us a good many years to catch on to his secret of keeping warm outdoors. Now we're on the right track and future boondocking promises to be cozy

FOR THOUSANDS OF YEARS MAN HAS WANDERED OVER the face of the earth clad in some sort of protective covering as a shield against the elements. The climate of the place in which he lived largely dictated what kind of clothes he wore. Thus we find modern man in the temperate zone protected but yet hampered by two types of clothing—one for summer heat and one for winter cold. Let us look for a moment at modern man rigged out in his summer garb in the temperate climate. What does he wear?

The obvious answer is—as little as necessary to receive the degree of protection desired, and to stay within the pales of law or convention. Consequently, it normally amounts to a couple of light layers of cloth with his feet encased in light and usually well ventilated shoes. All this is done so that in spite of his wrappings his body can breathe—the heat escaping into the cooler surrounding air, taking with it the accompanying vapors which pass through the light clothing and evaporate on the outside.

Now then, let's look at this same individual when winter comes. Immediately he begins to put on layers of clothing for protection. But why *layers*? Because he has found through experience that five overcoats weighing two pounds each are warmer than one overcoat weighing 10 pounds. This is because each layer traps and holds a dead air space which is a very efficient insulator. Thus, when the body gives off heat, the dead air space slows down this heat loss, giving the body a chance to generate more and maintain the balance. Because some of the heat

passes through the multiple layers of fabric, the vapor which the body gives off with the heat passes on and is dissipated. These are the principles which have governed the development of military cold weather clothing down through the years. Summed up, the results are reflected in the many layers of light fabric in the present cold weather uniforms. This had also been true with footwear up to the time of the insulated boot—briefly, many socks covered with a protective outer layer, sometimes made of felt or heavy canvas for use in extreme cold.

EXISTING COLD WEATHER clothing, therefore, allows a gradual transfer of heat through the clothing. Increasing the number of layers slows the process down sufficiently so the body can manufacture enough heat to maintain a balance. But what of the vapor? The vapor “goes along for the ride” with the heat on its way to the cold outside atmosphere. If all of it went outside and down the valley somewhere everything would be fine, but unfortunately it does not. Some of the vapor contacts the outermost cold layer of fabric, condenses into water, and gradually dampens the fabric. This process continues inward and gradually destroys the insulation originally provided by the separate layers. Thereby hangs the tale of the troopers’ need for this big load of extra clothing—a load which would put a pack mule to shame.

Up to now we've been discussing modern man surviving the elements in the cold climate of the temperate zone. We've neglected the one individual who really knows the business of cold weather living—the Eskimo. *Inuit*, he

calls himself, or translated, "The Man," who, in his own philosophy, is superior to all other men because he can exist in the arctic without outside aid while other men cannot.

• THERE ARE SOME INTERESTING things concerning our friend *Inuit* and his clothing which took modern man years of research and vast sums of money to stumble upon, even in theory. How does our cousin from the north dress? Provided he hasn't been "contaminated" by the white man, he dresses very much as follows: The body is rubbed with seal or whale oil to condition the skin and to form a thin barrier to the vapor generated by heat. (It is interesting to note that the troops of Ghengis Khan used yak butter, and others used animal fat.) Next a short-haired shirt and trousers, made from the summer skin of the reindeer, are put on skin side inside to form the first partial vapor barrier. Over this suit of skins, another suit of winter furs is worn with fur side outside. The feet are dressed much the same—succeeding layers of fur socks and innersoles and the outside fur boot or mukluk.

Our Eskimo (an Indian word of contempt, by the way) dresses in the skins of animals because they are a natural product in his part of the world, but—and here is the catch—they are to a large measure impermeable. In other words, they form an insulated vapor barrier, the white man's greatest new discovery, which made the new rubber boots that Marines wore in Korea last winter such a huge success. The Eskimo has used the insulated vapor barrier for thousands of years, but only recently has the white man caught up with him. Why is this process so seemingly mysterious? Actually, it's very simple.

The familiar lettuce or vegetable crisper, used in refrigerators, works because it provides a "near" vapor barrier and thus controls humidity. If you place a head of lettuce on a shelf without wrapping it or using a crisper, it will soon wilt. Why? Because the cooling coils of the refrigerator absorb the heat in the lettuce, taking with it the moisture or humidity. The moisture is stopped at the vapor barrier or metal surrounding the coils, and forms frost. This is the "far" vapor barrier. On the other hand, if you put the lettuce in a crisper, or in other words surround it by a "near" vapor barrier, a different condition will exist. The lettuce will not wilt because the moisture from it cannot travel with the heat to the coils but will remain within the crisper, thus maintaining a high humidity around the lettuce. Some of the vapor from the lettuce will condense on the inner surface

of the crisper and form little droplets of free water similar to the free water formed in conventional types of cold weather footwear. Now if you should place some insulating material around the outside of the crisper, neither the heat nor the moisture would be drawn to the coils and you would then have an insulated vapor barrier.

This is the principle incorporated in the Marine Corps' insulated rubber boot—insulation sealed in between two vapor barriers. Since no moisture gathers to destroy the insulation, it can function with 100 per cent efficiency at all times. As a result, constant protection is afforded in rain, mud, slush, ice, and snow. Even though water, snow, or ice should get inside, the effect is negligible since they all soon are warmed to body temperature and the moisture eventually evaporates. No more heavy wool socks and felt innersoles! Just the standard cushion-sole sock the year around. Frostbitten feet are virtually a thing of the past.

• THE SUCCESS OF THE VAPOR barrier boot has greatly stimulated thought and work toward an insulated vapor barrier uniform for cold weather operations. At present, this clothing does not represent a finished or even acceptable product. It is, rather, a basic item to find out if the principle works when applied to large areas of the body. There are many physiological unknowns regarding the reaction of the human body to complete encasement in a vapor barrier for long periods in very hot or cold climates. Although development of acceptable insulated clothing will take a lot of time and work, the military possibilities are most encouraging; particularly so for amphibious operations.

Think of it! There would be no more need for drying tents or bulky weatherproof suits to wear over conventional clothing. The poncho and rain clothing for wet-cold use would be things of the past. And a man might get a few hours sleep or rest on frozen ground, cushioned by his built-in air mattress, remaining warm without a sleeping bag, shelter half, and other impedimenta, ignoring rain or snow.

Inuit is perhaps justified in his concept of "The Man."

USMC



By LtCol G. A. Hardwick and
Maj V. D. Boyd



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The Commander's Voice

By Capt Frederick D. Singer

“THE BOOK'S OKAY IN THE CLASSROOM, BUT WHEN you get in the field you'll never use it.”

When the first reports were coming back from the earlier Korean action, we were told that the book had to be tossed out, especially in the field of communications. The official reports did not say this, but who believes those anyway! The important thing was that “Joe” said they threw the book away. So as a new “comm man,” I arrived in Korea filled with misgivings about the instruction I'd received at the Marine Corps Schools.

Much to my surprise, I found the communication sections keeping pretty close to the book. This was especially true at battalion and regiment.

I wasn't in Korea long before I realized that many of the infantry leaders, starting with the all-important platoon commander, didn't know enough about the communication equipment they had in their unit, and often weren't aware of just what communications were available to them. They tried to use the SCR-536 at extreme distances and complained when it did not work. They

strung sound-powered telephone lines between units five miles apart, put too many phones on the line, and then wondered why they couldn't hear well. Granted, no communication equipment is perfect and it's up to communication personnel to be ready with suggestions for improving it. However, a great many communication ills can be cured by proper use of the equipment we have. And I want to emphasize that the proper use of communications demands that the terrain and tactical situation be taken into consideration. As I said before, we didn't throw away the book in Korea, but we did adapt its teachings to our particular situation.

• FIRST, LET'S TAKE A LOOK at how we handled wire communications in battalion. The battalion maintained constant wire communication with regiment, except, of course, when the situation moved too rapidly to permit this. In the defense, two trunks were maintained; and in the attack at least one trunk. The battalion also had wire to adjacent units in the defense and, when possible, in the attack. This not only provided the commander with communications to his flanks, but also opened alternate lines to the higher echelon. In the defense, battalion laid two trunks to each rifle company and to the weapons company. In the attack we always had wire communications with weapons company and tried to maintain lines with the assault companies. It should be noted here that the weapons company command post was usually with the 81mm mortar platoon, and one phone sufficed for both in the attack. Each company, within itself, maintained sound-powered nets. These ranged in complexity from about seven phones on one line (rifle platoons, 60mm mortars, forward observers, company commander, and command post) to 25 phones utilizing a company net consisting of

apparent. The platoon became quite dependent upon such an extensive network, and since the platoon commander could check his entire position by phone, he did not make a nightly inspection of his lines as often as he did at the start of the Korean war. Movement at night is a highly debated subject, I know, but the Korean hill was not the dense jungle of World War II; the distance from the enemy positions was considerable (in the later phases); and as numerous events proved, checking the lines throughout the night was a necessity.

Now let's see how we handled our radio communications. Nets to regiment and subordinate units were employed exactly as taught by the Marine Corps Schools. We maintained radio communications at all times with regiment on the regimental command net (AN/GRC-9, TCS, SCR-506) for the passage of administrative traffic and lengthy operations orders not of an urgent nature. Intelligence and dispatch summaries were sent over this net.

In the attack, and in the defense when wire was out, we were in contact with regiment over the regimental tactical net (SCR-300). When distances were extreme, or terrain exceedingly rugged, regiment established relay stations. In the attack the greatest difficulties with this net were excessive traffic and interference by the enemy who possessed much of the same equipment. When traffic was heavy, an over-load net was available which was activated on regimental order—the auxiliary tactical net (SCR-610, SCR-619). The undesirable feature of this net was the weight of the equipment.

The battalion commander had his battalion tactical net (SCR-300). We had two sets with each company, which not only provided an extra set if one failed, but allowed the company commander to talk to his executive

When the chips are down in a firefight, the Old Man's orders must get through. It is the communication officer's job to make certain everyone gets the word "loud and clear"

platoon command posts and individual platoon nets made up of the squads and heavier automatic weapons.

In addition, the forward observers for artillery, the 81mm mortars, and the 4.2-inch mortars had direct wire to their parent organizations' switchboards, which in turn were connected with the infantry battalion. This gave the rifle company commander a substantial number of alternate lines back to his commander.

The greatest difficulty encountered was maintaining these lines over long distances, and a solution will be offered later. The result of such a large number of sound-powered telephones in the rifle company is readily

officer who was normally beyond the range of the SCR-536. These three additional stations did not at any time cause a net over-load. The observation post group as well as the command post were on this net, the details of which will be discussed later. Tactical air control and naval gunfire could come up at any time on the battalion tactical net as the situation dictated. The 81mm mortar platoon was also on this net, as well as having a conduct-of-fire net of its own (SCR-300). The frequency was allotted from one of the regimental spares. This was an extremely successful net, and the one deviation from the "school solution" which could well be adopted by the

Marine Corps. The antitank platoon and machine gun platoon also had stations on the battalion tactical net.

Within the rifle companies the SCR-536 was used for a company tactical net. Frequently, however, rough terrain and wide frontages demanded a more powerful radio for intra-platoon use. Also, unless the sets were realigned frequently, they would not operate properly. The greatest percentage of radio failures could be traced to poor batteries. (About 30 per cent of our supply proved to be defective.) The batteries for the 536 radio, in particular, gave us a great deal of trouble.

OUR DOCTRINES TEACH us that we must have a nerve center for our units in the field. In the smaller units this nerve center, or command post, is actually the commander. To him comes all information concerning the enemy, his own troops, adjacent units, etc. He receives this information and makes his decisions. From battalion upward the units are too complex for the commander to control them alone, hence the general and special staffs. In order that the information received by these staff members may be acted on quickly and efficiently, we have the staff congregated at a center of communications—the command post. Now, since personal observation is the best source of information a commander can have, most commanders desire an observation post, relatively close to their CP, where they can follow the action of their command with their own eyes and give timely orders. The terrain in Korea did not often lend itself to such an ideal solution and often the commander found that his best observation was very close to the assault companies, and sometimes right with them. Under such conditions he could not have a large command post following along with him, nor could the staff function properly while continually moving and under intense fire. Hence the forward observation group, or command group as it was commonly called in Korea.

The command group in its simplest form consisted of the commanding officer, his operations officer, and the necessary communication personnel to establish wire communication to the command post, and radio to the companies and regiment. According to the individual personalities of the various commanders and their enlarging experiences on the battlefield, other staff officers might also be present; i.e., intelligence officer, communication officer, forward air controller, artillery liaison officer. As the command group moved forward it also reconnoitered for a new site for the CP. The observation post telephone line provided an excellent means for splicing through to regiment during the displacement. (This is also "right out of the book.") The CP in the rear functioned continually, receiving and sending reports and handling all the small details necessary to a successful operation. The CP also was in continuous communication with the com-

panies and with regiment. If the command post was near a road, the battalion dump would be in the CP vicinity. As the war progressed though, the command group grew larger and larger until in the bitter September (1951) fighting it had grown, in some battalions, to enormous size. As a result the communications within this group were very poor and the CP, remaining with the supply dump, served no useful purpose.

The principle of the command post was lost. Although a center of communications, it served no one. Those whom it should have served were in the mobile command group and had only limited communications. There were two ways of getting around this. The commander who desired his dump to be with the command post could either leave the CP in the rear or move the dump forward over difficult terrain. The obvious and as proven best solution for the attack was to separate the main dump from the CP, leave the dump on the road network, and move the CP "on the hill." What did this accomplish?

1. The supplies could reach the dump entirely by motor from the rear, and were in a comparatively safe position. A forward dump of necessary expendables was established in the vicinity of the CP.
2. The command post was close to the observation post. The lines of communication to the companies, communication-wise, (and from the forward dump, supply-wise) were short, therefore keeping wire in to every company was no great problem. Also the communications center served those staff officers whom it was intended to serve.
3. Extra personnel were not tagging along, continually on the move, with the commander.
4. There were only two "long lines," and these ran to regiment and the supply dump. Help in maintaining these lines was obtained from regiment in the form of a wire team attached to the battalion. This team was stationed with the supply dump which formed a half-way test station, and the team worked in both directions on both lines permitting the wiremen in the CP to maintain the CP locals and company trunks.
5. As an alternate means of communication to the supply area and the wire team stationed there, the vehicular medium-high frequency equipment (AN/MRC-6) organic to a battalion was able to net with the AN/GRC-9 in the CP.

When the true test of this solution came about, it worked. Had the September offensive been continued, the wire network was in a position to support the attack with ease. Such a separation of the battalion's facilities is necessary only in the ridge-running warfare of the mountains. Low, rolling terrain with suitable roadnets would obviate such a communication system.

In some instances the front lines were so far forward of the roadnets that the entire administrative element of the battalion would be far to the rear, with only a bare operational echelon in the supply area. From the rear switch there must also be trunks to regiment, and often the laterals to adjacent battalions would be tied into that board rather than to the main or forward CP, depending on the location of the adjacent battalions' command posts.

All these systems are merely variations and adaptations of the basic principle that the center of communications must be with the operating CP where it can serve those staff officers directly concerned with the tactical operations of the battalion. The administrative echelons need communications too, but not as involved communications as those of the operations echelon. Wire lines must be kept as short as possible, mainly because of limited personnel to maintain the lines. Since most lines were forward to the companies, observation post, tactical air control party, etc., it stands to reason the CP should be as close to these parties as possible.

The infantry battalion CP is highly mobile. It can walk and its communications, as well as other equipment, can be man-packed. To be truly effective while operating, it must remain stationary as long as possible. The commander must be kept in constant contact with his CP and, through it, in contact with his senior and subordinate unit commanders.

With the present tactical situation in Korea as stable as it is, the communication facilities in all echelons have grown to enormous size. Many battalions are operating CP switching centrals utilizing 36 to 40 drops. As you can well note, this requires a lot of wire for a battalion. It requires equipment way in excess of that allowable under the present T/E. With more lines and more radios,

it takes more men to maintain and operate the equipment and it also takes more NCOs to supervise the additional men. This is apparent in the battalions of the 1st Mar Div today, where most radio sections are split into two groups—voice and CW, and where the table of organization calls for only one radio section. Two additional radio NCOs are needed in addition to the extra operators. In the wire section the number of wire teams had to be increased as well as the number of switchboard operators.

The danger in this buildup of communications lies not with the fact it is being done in Korea. The static situation perhaps justifies it. But we must view it in its proper perspective—a particular situation—and not as justification for a complete change in our communication system. Remember, we are primarily an amphibious force. We should never lose sight of that! If we expand our communications to fit a large land mass, what will we do when we're forced to maintain communications on a contested beachhead?

Let's keep our flexibility and apply the lessons learned in Korea where they fit, but keep the basic communication principles unchanged. The radio nets we have now are adequate for most any tactic or terrain; our wire system is easily adaptable to any terrain; and I hope to have shown here that the principle of locating the center of communications in the operating CP is a must.

Finally, communications, like tactics, must be adapted to the battlefield. The communications officer who fails to modify his procedures to fit the battle situation is overlooking the main purpose of communications—to carry the commander's voice to the far reaches of his command and enable him to receive information from his units in the firefight. Communications, then, must support the commander's scheme of maneuver.

USMC

In Korea the command group was always displacing—communicators were kept busy



WATCH USE YOUR EYES

EVERY MARINE, OFFICER AND MAN, IS AT ONE TIME OR ANOTHER AN OBSERVER. He may be an artillery forward observer or an infantry sergeant on patrol, or a rifleman selecting his target and setting the sights of his rifle. In any of these tasks, plus many more, the Marine must use his eyes intelligently. He should know his visual apparatus and use it as efficiently as possible.

We have used our eyes since birth. Thus we are prone to believe that we know all about the art of seeing. Yet we are always searching for mechanical gadgets that will enable us to overcome apparent limitations in night vision. Although it has been definitely established that seeing is a skill that can be developed, the Marine receives little or no vision training during his career—a career that may be terminated because the enemy “sees” first. What can be done to give the Marine better “vision sense?”

Essentially, good observation consists of knowing how to make use of the eyes, realizing what they can and cannot do, and understanding the relationship of the eyes to the brain. Once the Marine has been given basic instruction concerning vision, the remaining task is the development of proper sight habits. This training should be

detailed knowledge of the structure and

By LtCol Robert E. Collier

ILLUSTRATED BY PFC CHRIS MAGALOS

functioning of the eye, he should be sufficiently familiar with the mechanics of vision to provide a basis for improvement in habits of good observation.

The eye is a complex organ. However, if the eye is compared with a camera, a superficial knowledge of its structure and functioning can be obtained. As a matter of fact, the eye takes a continuous color picture of what it is seeing. This picture is then transmitted by nerve impulses through the optic nerves to the brain. Since the brain is the selecting and controlling agent for the eye, the mental process is of major importance, and moreover can be controlled and improved.

THE STRUCTURE OF THE EYE gives it certain capabilities and limitations which are binding. It is most difficult for an individual to change these characteristics without the aid of glasses. For example, a person with 20/20 vision should be able to see an object slightly over one inch at 300 feet, but this is about the best he can hope to do, and even then only under controlled conditions in an optics testing room. Light conditions, lack of contrast of objects with the background, and haze will reduce the theoretical limit materially.

The retina of the eye which is comparable to the film of a camera is made up of cells called "rods" and "cones." Actually they are light-sensitive nerve endings at the back of the eye. This structure places certain limitations on the use of the eyes since the two types of cells are used differently. Generally speaking, the cones are used in day vision. These cells are located in the center of the eye, are capable of seeing color and detail, and can pick up distant objects. The rods, located in a circle around the cones, are color blind and can neither pick up detail nor small objects. They are used, however, in night vision and to see out of the corners of the eye. Although the rods are used primarily in night vision, there is no sudden boundary and under certain light conditions both the rods and cones may be used.

The brain plays an important role in good vision. The multitude of images received by the eye are useless until certain ones are selected by the brain for interpretation. We all know how the girl-friend's face and figure appear. How easy it is to spot her in a crowd! However, do we all realize the significance

of this in relation to good vision?

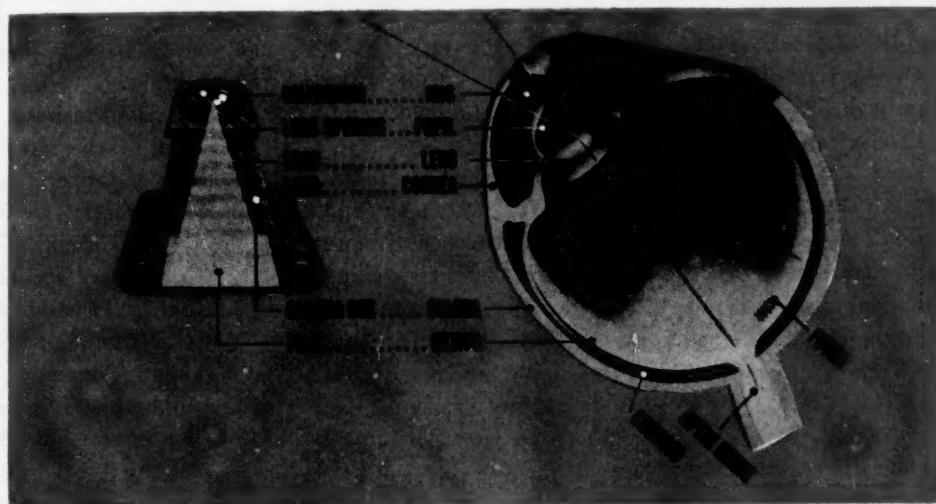
In the case of the girlfriend we were prepared to see something familiar. We had a mental picture of her in our mind. And when the girlfriend's image was transmitted from the eye to the brain, our little "built in IBM machine" turned over a couple of times, interpreted the image, and gave us the answer. In effect we had in store a "mind's eye" picture of the friend for use at any time.

The mind's eye preparation is the first and foremost of the principles of good observation. A great deal can be done to assist the Marine in preparing his mind's eye for combat operations. We can outfit Aggressor forces in captured enemy uniforms and train troops to recognize them in a flash. Characteristic features of battle areas can be built into training areas to familiarize our forces with these scenes before the battle begins. Latest enemy techniques in tactics and field fortifications should be included in these training areas. The Marine should know (1) what he is looking for; (2) what it looks like; (3) where he is likely to find it; and finally (4) what aids are available to assist in pointing it out.

Once the Marine has a knowledge of the mechanics of the eye, its limitations, and the relationship of the eye to the brain, he should receive instruction in the technique of observation.

During daylight hours one sees things best when looking directly at them. This means that the observer must look at every spot within the zone of observation. Planned, continuous, systematic study or scanning of the zone is required. Everyone should develop a scanning pattern that will cover the entire observation zone with the least expenditure of effort. It takes time and effort to develop this habit, but once perfected it will pay rich dividends.

When scanning, it is usually best to start with the nearest part of the area and work out. The pattern can be



You have 20/20 vision, you're almost a "team shot" with the M1, and you are trained for combat. But wait a minute, Marine. Do you actually "see" what you're looking at?

changed occasionally to change the focus of the eyes and give them some rest. Blinking will also rest the eyes. A definite scanning pattern requires concentrated attention and effort since it is very easy to let the mind drift to more pleasant things than the battlefield. However, when the mind drifts from its observation task there is a corresponding loss of observation efficiency.

THE BEST RATE OF SCANNING is about one degree per second. This means that the head and eyes appear to be in constant motion, but in fact the eyes move from spot to spot.

A by-product of this scanning procedure is improvement in "corner of the eye" vision. This corner of the eye vision is important since it is so sensitive to movement. If the eye is moved from spot to spot in a scanning pattern there is a greater possibility of picking up enemy movement.

A knowledge of the technique of observation is incomplete without the inclusion of certain factors generally associated with aerial photography, but of equal importance to visual observation. Since these factors are understood by most military personnel, they will be mentioned only briefly here.

Unless there is contrast between an object and its background it cannot be seen. A Marine must make use of contrast to find an object by its shadow or color when the object itself may not be visible. The angle of light may make a difference in contrast, hence the observer should know how different surfaces and objects appear up-light and down-light. The texture of a surface determines how it will reflect light, and will often present valuable clues to its identity. The Marine should know characteristic patterns presented by typical battlefield objects. Discontinuity or breaks in regular appearance of terrain, color, and foliage should attract attention and should give the Marine clues in regard to enemy troops and installations.

Over and above the limitations imposed by the structure of the eye, there are certain obstacles to good vision and observation.

GLARE IS PROBABLY THE GREATEST deterrent to good vision. Glare is nothing more than the presence of more light than the eye can handle. It is the same as opening the diaphragm of a camera too wide, letting in more light than the film is designed to absorb. In the case of the eye, the excessive light over-stimulates the organ causing loss of sight. Glare can be overcome by use of sun glasses, by shading the eyes, or by refraining from looking at light-reflecting objects.

Fatigue also reduces the efficiency of observation since it becomes increasingly difficult to keep the mind on the observation task as one becomes tired. Eyes become strained if they are required to continue an observation

task for long periods of time, thus reducing observation efficiency.

As in the case of day vision, most people don't know the facts about night vision and don't seem to realize that there is anything to learn. Of course the limitations of night vision are drastic and all we can expect is to make the most of our God-given faculty of sight. Even if provided with mechanical night-vision devices, our Marines must be able to use their eyes to the best advantage at all times.

The major point that must be understood with regard to night vision is that the construction of the eye demands it be used differently at night. Also, since our eyes tell us so little at night, a great deal of practice is required to be able to recognize things.

AS WAS MENTIONED EARLIER, we use the cones in the eye for daylight seeing and the rods at night. These night-seeing rods adapt very slowly for night vision. For example, if one goes from a brightly lighted room into darkness, it takes some 30 minutes for these rods to completely adjust, and it takes only a few seconds of bright light to destroy this night adaptation. Strange as it may seem, one can see with the cones (day-seeing cells) in red light while the rods (night-seeing cells) react to red light the same as to darkness. Hence, by using red light or goggles with red lens, the period required for night adaptation of the eyes can be reduced to about 12 minutes.

A second important point in regard to night vision is that there is a blind spot in the center of the eye. Therefore, if one looks directly at an object, it can't be seen. To see at night one must look off-center, hence, it is mandatory that scanning be used to the maximum.

Another point to remember is that the red cells are color blind and "see" color only in shades of grey. Considerable night training is required in order that familiar objects may be recognized. Even the smallest clues must be used to assist in identifying objects picked up by the eye at night.

Good vision training should be as much a part of the individual Marine's training as other basic subjects. To use his eyes properly he must know and understand the following points:

1. The brain and the eye are a team; an active mind is required for efficient observation.
2. Seeing is a developed skill; develop good habits, eliminate poor ones.
3. A good scanning pattern is required to overcome limitations imposed by blind spots.
4. Know the limit of your eyes under various conditions.
5. Eyes must be adapted for night vision.
6. Glare and fatigue are enemies of good observation. Use your eyes correctly. Be a more efficient Marine!

US MC

KOREA AWARDS



Medal of Honor

Capt William E. Barber, Sgt James I. Poynter.

Navy Cross

PFC R. J. Elliott, MSgt Edward Fristock, LtCol John L. Hopkins, Sgt William B. Lourim, LtCol Franklin B. Nihart, SSgt Stanley J. Wawrzyniak.

Silver Star

SSgt Russell J. Borgomainero (2d), PFC Billie F. Bradshaw, 1stLt Joseph M. Brent, PFC James L. Cook, 2dLt Charles G. Cooper, Sgt R. H. Cooper, Sgt James G. Cotton, Sgt Joseph F. Covella, 1stLt James H. Cowan, 1stLt James T. Cronin, Sgt James G. Curry, Jr., 1stLt William F. Curry, PFC Alex G. Filomeno, 1stLt Sidney H. Hilliard, Jr., Sgt Manual H. Hirata, LtCol Homer E. Hire, Maj Morse "L" Holladay, LtCol John L. Hopkins, 1stLt Richard D. Humphreys, PFC Gene H. Lease, Sgt Robert R. McBryde, PFC George McDurmon, Maj David W. McFarland, PFC Robert R. McGhee, PFC Peter M. Nassetta, PFC Raymond E. Pierce, Cpl Philip A. Reynolds, Capt George A. Rheman, Pvt Thomas P. Riccardi, Sgt William A. Robbins, Cpl Louis Roundtree, Cpl Louis M. Williams, 1stLt Robert G. Work, Capt Robert P. Wray.

Legion of Merit

LtCol Gordon D. Gayle, Maj Carl A. Nielsen, LtCol James H. Tinsley (2d), LtCol Howard E. Wertman.

Distinguished Flying Cross

Capt Russell D. Baade, Capt Austin J. Bailey, Jr. (2d), Capt Dennis W. Ballant, Capt Lincoln Boyd, Jr. (2d), 1stLt Lyle R. Bradley (2d), Capt William G. Carter, 1stLt Robert O. Crocker, Capt Walter P. Dean, 1stLt William M. Dwiggins, Capt Lawrence J. Ewing, Jr. (2d), Capt George F. Farling, Jr., 1stLt Joseph C. Gardiner, Jr. (2d), MSgt Richard O. Godley, Jr., MSgt Arthur H. Grebe, 1stLt Edward S. John, 1stLt Edward B. Keys, Jr. (2d), MSgt Sigmund J. Kuczynski, 2dLt James J. Linn, Capt Paul A. Lucey, 2dLt Carl M. Maloy, Capt John P. McGrand (3d), Maj Robert D. McLaughry (2d), Capt William J. O'Brien, III, 2dLt William E. Parcell, Capt Frank G. Parks, 1stLt John L. Scott, MSgt Frank W. Scroggs, 1stLt Ralph H. Thomas, Capt Peter A. Tonnema, Jr. (4th), Capt James B. Turner, Jr. (2d), LtCol George F. Vaughan, Capt George M. Wallace.

Navy and Marine Corps Medal

Sgt Richard B. Bettis, PFC Gerald H. Britton, PFC Harold J. Cinto, TSgt Walter D. Croas, Sgt John J. Jarzemkoski, SSgt Donald M. Long, PFC Milton E. McGinnis.

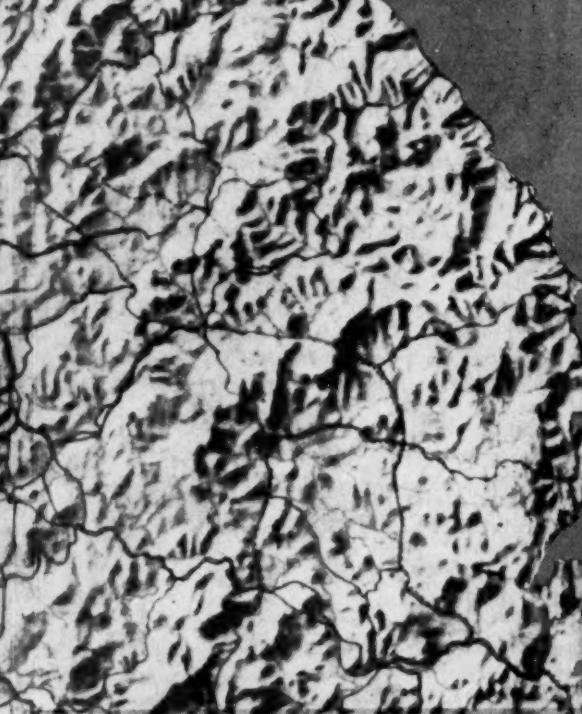
Bronze Star

PFC Patrick M. Callahan, 1stLt James L. Carey, Sgt Norman J. Carnes, PFC Raymond L. Carr, Sgt Henry Carter, PFC Peter G. Casares, Sgt Paul J. Cassidy, PFC Nicholas Christman, LtCol Horace H. Figuers, Sgt Arthur T. Fisher, Sgt Roy H. Floeger, Jr., PFC Don L. Foust, MSgt Gerald J. Golden, PFC Ruben R. Kuretsch, Sgt Michael Lanaski, SSgt Stanley G. Lasarsky, 1stLt Robert Lawrence, Cpl. John H. Lee, PFC Max G. Leonard, PFC William A. Lewis, SSgt John E. Lincoln, Sgt Wayne H. Link, PFC Dewey R. Lowe, TSgt Clifford K. Lucas, MSgt Roy R. Luke, Sgt Charles V. Lyman, PFC Paul L. MacDonald, Cpl Gilbert D. Maciejewski, PFC John M. Miller, PFC Jose Molina, 2dLt Anthony A. Monti, SSgt Daniel M. Murphy, Cpl Ernesto Murillo, Maj Peter J. Mulroney, TSgt Kenneth L. Patrick, PFC Alvin I. Pope, 1stLt Richard J. Randolph, Sgt Joseph Rea (2d), Sgt George M. Rebholz, Sgt Oscar E. Reece, SSgt Willis A. Reid (2d), Cpl Dean A. Reinke, 2dLt Robert O. Reisinger, PFC Billy Reynolds, Capt George A. Rheman, Sgt Vernon L. Richardson, PFC Dan Roberson, Sgt Alfred D. Roberts, 1stLt Howard W. Rogers, SSgt James W. Rogers, Cpl Richard R. Rohrbaugh, Maj Ralph C. Rosacker, 2dLt Earl F. Roth, Jr., PFC Felix G. Russell, Jr., Sgt John J. Ryan, Cpl Jack L. Ryle, PFC Henry E. Sandman, Cpl Dennis J. Scannell, PFC Donald Scheidt, Cpl Donald K. Schmidt, 2dLt Harold G. Schmidt, 1stLt Lawrence J. Schmidt, PFC Curtis D. Smith, 1stLt Hans M. Smith, PFC Stoy R. Smith, PFC Troy B. Smith, Jr., 2dLt Robert G. Staffney, PFC Jack D. St. Amour, CWO Beverly N. Stanaland, 1stLt Charles R. Stephenson, III (2d), Cpl Earl E. Stickler, Jr.



MARCH OF THE IRON CAVALRY

Marine Tanks in Korea



• THERE IS NO DOUBT AS TO WHEN MARINE TANKS first saw action in Korea. They had a part in the very first fight of the 1st Marine Brigade in the Pusan Perimeter, and Marine tanks have been poking their 90mm noses into trouble ever since that August morning in 1950.

From the beginning, Company A of the 1st Tank Battalion let no moss grow under its treads. Activated at Camp Joseph H. Pendleton on 7 July 1950, the outfit consisted largely of men trained with the M4A3 medium tank and the 105mm howitzer. Most of the gunners and loaders had never fired a 90mm gun from an M-26 tank until that day, when Capt Gearn M. English held a brief weapons familiarization session at the Pendleton tank range. Four days later Co A embarked from San Diego with the 1st Provisional Marine Brigade commanded by BrigGen Edward A Craig. And on 7 August, a month after activation, the men were firing 90mm shells down the throats of the enemy in a tense sector of the Pusan Perimeter.

Already the men of Co A had learned a lesson that all good tankmen must absorb sooner or later. They learned that while an M-26 may resemble a mechanical rhinoceros, it can be as sensitive on occasion as a platinum watch. This truth was impressed upon Co A during its second day at sea when 14 of the 17 new tanks were badly damaged by salt water flooding the forward part of the ship's well deck. Maintenance men put in tremendously long hours throughout the voyage on repairs, and they had all but one of the machines ready for combat when the brigade landed at Pusan.

On 7 August, the first day of action for the Marines, the tank company had three men wounded by enemy artillery fire while moving up to jump-off positions in the Chindong-ni area. Here the brigade and Army 5th RCT were placed by Eighth Army under operational control of the 25th Infantry Division for a counterattack along the Masan-Chinju-Hadong axis to stop the North Korean invaders driving toward the vital port of Pusan.

The Marine tank company was in the thick of it from the beginning. On 8 August the 2d platoon supported the advancing Marine infantry with 90mm fire. Meanwhile the 1st platoon was given the mission of recovering 4.2 mortars left behind by an army unit compelled to withdraw under heavy NK automatic fire. Two tanks succeeded in bringing back three mortars and most of their ammunition without any casualties.

Within a few days Co A learned lessons in maintenance such as are taught only in the school of combat experience. Tank No. 33 developed acute carburetor trouble during the forward movement, and No. 12 showed its

In cooperation with the Historical Branch, G-3, Headquarters, U. S. Marine Corps, the GAZETTE herewith presents another in a series of official accounts dealing with Marine operations in Korea. Prepared by writers and researchers of the Historical Branch, these articles are based on available records and reports from units in Korea. Also to be treated in this series:

Marine Artillery in Korea

1st Medical Bn in Korea

Publication is scheduled for consecutive monthly issues.

Admittedly it is too soon to write a definitive history of Marine fighting in Korea. Not only are enemy sources lacking, but even Marine and Army records are still incomplete. Articles of the length to be used in the GAZETTE, moreover, do not allow space for more than an outline of operations which will ultimately be given the detailed treatment of a monograph.

But timeliness is also an end to be sought, and these preliminary narratives are based on Marine and Army reports received up to this time. These articles are presented in the hope that GAZETTE readers will feel free to add to the incomplete record. This is an invitation, therefore, for you to supplement the existing record. Send your comments and criticisms, as well as any other information you can make available, to the Historical Branch, G-3, Headquarters, U. S. Marine Corps, Washington 25, D. C.

perversity by breaking four fan belts in rapid succession. These machines were soon restored to mechanical health, but No. 13 had to be disarmed and later destroyed after crashing through a single-span concrete bridge. Then No. 11 threw a track while crossing the stream bed, making it necessary for the column to stop for four hours and complete a by-pass.

These were samples of the things that could happen to a tank and downgrade it from a cruising fortress into a stationary target. But the men of Co A made such rapid progress that they handled their machines expertly on the fifth day of the advance, which brought their hottest fight of the entire operation.

The 5th Marines had driven almost within sight of Chinju, the brigade objective, when the 1st Bn was counterattacked near Sachon. Concealed NK troops were spotted before the Marine infantry entered a defile covered by machine guns on both sides of the road. Even so, the enemy had the advantage of prepared positions on the high ground as the M-26s of the 3d platoon shouldered into the fight. Rice paddies made it impossible to maneuver off the road, but the tanks blazed away with machine guns and 90mm rifles. Lucrative targets of opportunity were provided by two enemy groups, numbering about 100 men each, attempting to reach the hills on both flanks. Marine tanks and infantry killed or wounded an estimated 125, and the remnants took a hard pounding from Marine artillery and air strikes.

The tanks of the 3d platoon were under fire from three sides, and No. 33 cut down seven fanatical North Koreans who came within 25 yards. Not a single machine was disabled by the enemy, however, and only one developed

By Lynn Montross

mechanical trouble during a four-hour action. Afterwards the M-26s doubled as field ambulances by evacuating seriously wounded infantrymen taken into the escape hatches.

That night, with the final objective within grasp, CG 25th Inf Div ordered the withdrawal of the Marines as well as the Army troops advancing on Chinju by a parallel route. Enemy pressure on the Naktong Bulge threatened the central front, and Eighth Army directed that the brigade be sent to this critical area under operational control of CG 24th Inf Div.

AT THIS PERIOD, with the war only seven weeks old, the Red invaders had used their material superiority to push U. N. forces into a corner of southeast Korea. Eighth Army had perforce adopted a strategy of trading space for time until reinforcements could land. But the Pusan Perimeter must be held at the risk of losing vital supply routes and ports, for the enemy was trying desperately to break through while he retained the advantage in weight.

In this situation the Marines found a mission as "firemen"—an air-ground team that could be shifted from one endangered sector to another as a mobile reserve. Eighth Army was launching counterattacks to prevent an enemy build-up, and on 17 August the brigade jumped off in combination with Army infantry against the Communists who had driven across the Naktong river. The struggle for Obong-ni ridge raged for a day and night, but the Marines finally evicted the enemy. Their capture of this key terrain feature led to a North Korean rout on the 18th, with Marine air and artillery pounding the fugitives.

As yet the tankmen of Co A had not encountered any of the enemy's Russian-built T-34 tanks. The first meeting with the "caviar cans" took place at sunset on the 17th, when four of them ventured around a road skirting Obong-ni ridge. The 3d platoon had been alerted in time for its tanks to surprise the first NK machine at a range of 100 yards. No. 34, in the lead, set it on fire with three rounds of armor-piercing, scoring fatal hits. In a few more seconds the fourth T-34 beat a retreat after the second and third had been destroyed by a combination of tank, 75mm recoilless, and 35-inch rocket fire. No damage resulted to Marine armor from the near misses of an estimated 15 rounds of NK antitank fire.

THE BRIGADE'S ANTITANK COMPANY, commanded by 1stLt A. S. Bailey, treated the enemy tanks to 29 rounds of 75mm recoilless. This year-old unit, whose functions were not too well understood by many Marines at the time, was to make itself better known in Korea. Packing a terrific wallop with its recoilless rifles, rocket launchers, and .50 cal. machine guns, the antitank company even had

its own platoon of M-26s at a later date to assist in killing enemy tanks.*

This first Marine tank battle, if such it could be called, gave our tankmen a low opinion of North Korean tactics which subsequent encounters only confirmed. Even granting that the enemy was handicapped by lack of air power, he failed too often to use his armor in co-ordination with infantry for mutual protection. And after keeping his tanks idle for days, hidden from air observation, he was too likely to swing to the opposite extreme and sacrifice several machines in an overbold attempt to surprise Marine infantry.

In spite of such lapses, NK armor was much more effective in the next operation, when nine T-34s were expended in a frantic attempt to stop the Marines at all costs. The brigade, which had been in assembly areas since being relieved near Obong-ni on 19 August, was attached to the 2d Inf Div for a new counterattack on 3 September. The scene was the familiar Obong-ni area, now in possession of North Koreans mounting their long expected all-out offensive to smash through the UN perimeter to vital supply ports.

THE MARINE ADVANCE of the first day rolled back an enemy determined to keep up his momentum. Nevertheless, the two assault battalions gained ground against a heavy concentration of NK artillery, mortar, automatic, and AT fire. The tanks of Co A, working as usual in close coordination with the infantry, were credited with destroying four T-34s during the day. Again the enemy sent his machines into action without proper infantry support, and Co A tanks finished them off easily in one-sided gunnery duels.

The attack continued next day to the second objective over ground littered with NK slain and wrecked equipment, including two more T-34s knocked out by Co A tanks. Not until the afternoon of 5 September, as the Marines advanced an additional 2,500 to 3,000 yards, did the T-34s finally succeed in bringing off a surprise. Rounding a bend in the road, three of them came up unseen on Marine tanks firing in support of the infantry. Two M-26s were disabled by the first enemy bursts, though the crews managed to escape. Other Co A tanks were unable to fire in return, being blocked by the disabled machines in the narrow road. But all three T-34s were speedily destroyed by 3.5-inch rockets of the 1st Bn and antitank company thus ending the last Marine tank action of the Pusan Perimeter. That afternoon the brigade was ordered by Eighth Army to proceed to Pusan, after relief by 2d Inf Div elements, and prepare for embarkation.

*"75s Up," by 1stLt Earl R. Delong, published in the GAZETTE of August 1952, gives an interesting and instructive description of this comparatively new Marine unit.



Pusan Perimeter — For a month-old outfit, A Co was doing all right

A new chapter of Marine tank operations opened on the eve of the Inchon-Seoul amphibious assault, when Co A was absorbed into its parent organization, the 1st Tank Bn commanded by LtCol Harry T. Milne. The other letter companies had sailed from San Diego on 18 August, landing at Kobe on 1 September to begin plans and preparations for the Inchon landing on the 15th. This speeded-up schedule did not allow much time for training, and few gunners and drivers were experienced in driving or firing the M-26, having been instructed only with the M4A3. Some of the reservists, however, had only the most basic knowledge even of the latter machine. Thus the recent combat experience of Co A was an asset to the entire battalion on D-day, when MajGen Oliver P. Smith's 1st Mar Div hit the beaches as the assault force of X Corps.

A platoon of Co A tanks landed on Wolmi-do in the morning, and the other two platoons went ashore on Red Beach in Inchon late that afternoon. No enemy armor was encountered, but the M-26s did good work in infantry fire support and mopping up operations.

With the seaport secured, Marine tank officers had keen anticipations of the prospects for battle during the advance of the two assault regiments from Inchon to Kimpo airfield and Seoul. Here the terrain was comparatively level for Korea, and it might be supposed that enemy tanks would put up a stiff fight to defend the chief Communist airfield and communications center.

The first kill was credited to Marine air on the 16th, however, when the Corsairs made scrap out of six T-34s spotted in the zone of the 1st Marines. Marine tanks did not have their turn until the next day, when they helped to teach the enemy a lesson in one of his favorite tactics. Units of the 5th Marines had been ambushed several times in the Pusan Perimeter, and they took grim pleasure in setting a trap for enemy tanks observed at dawn as they sallied forth in defense of Kimpo. Three platoons of infantry were posted in concealment on high ground overlooking the road; the rocket launchers and 75s took positions farther back, and the tanks of Co A remained in the rear to open proceedings with 90mm fire.

This time the enemy showed more tactical sense by sending about 200 infantry to protect the six T-34s. But all were doomed when the first rounds of the Marine tanks gave the signal for bazookas, 75s, and machine guns to pour in their fire. The result was sheer annihilation. Within a few minutes the NK tanks and infantry were wiped out of existence, and the spectacle of destruction greeted Gen Douglas MacArthur on his first trip of shore inspection.

Only light resistance awaited the rest of the way to the airfield, which was secured late that afternoon. While other units of the tank battalion were attached to the 5th Marines, Co B accompanied the 1st Marines on a parallel route toward Yongdungpo, an industrial suburb of Seoul. And these untried tankmen came through a baptism of

fire on D-plus-2 that would have tested veterans.

The infantry of George Co was mounted on the tanks to spearhead the regimental advance along the main Inchon-Seoul highway. Enemy automatic and small-arms fire stopped the column repeatedly, compelling the riflemen to dismount and deploy on both sides for a combined tank and infantry assault. Five attacks of this sort had to be launched, with the guns of the tanks supplying the only available supporting fires of the final three-hour battle.

It was a rugged assignment for tankmen who refueled from the pump of an amtrack, though enemy fire made the crews take to cover several times. But Co B gave a good account of itself, destroying the only enemy tank encountered that day as well as several antitank guns and machine gun emplacements.

The tanks resumed the attack along with the infantry

ing of the 20th with the crossing of the river Han in the sector of the 5th Marines. This operation was facilitated by the armored amphibian vehicles of the division. After the assault troops crossed in LVTs, their ammunition and supplies followed in DUKWs. Two platoons of Co A tanks were ferried over to support the infantry, which secured a foothold by 1500 and dug in for the night.

Up to this time the enemy had been conducting delaying actions, but during the next four days he put up a last-ditch fight as the two Marine assault regiments converged on the approaches to Seoul. The tanks of Co A took part across the Han in the assault of the 5th Marines from the northwest. In this rugged area the enemy literally had to be blasted out of strong hill positions, and the 90mm rifles were needed to supplement the howitzers of the 11th Marines.

On a typical day, the 22d, it was estimated that Co A



Seoul — 90mm guns cut the barricades down to size

at dawn and advanced for eight hours, destroying an AT gun, an artillery piece, and an unestimated number of infantry. Co B was relieved late that afternoon by Co C, which was alerted to prepare for a large-scale enemy tank attack in the morning. This effort did not materialize, and the new tankmen were held up in their advance by the most extensive mine field encountered so far by Marines in Korea. After the lead tank was disabled by an explosion, the other machines fired in support of the infantry as engineers cleared the road.

When the threatened NK tank attack took place on the morning of the 20th, Co C was delayed by a mine miring down in a roadside rice paddy. Meanwhile the enemy met a hot reception from the bazookas of the infantry, and three of the T-34s escaped after the other two were destroyed.

The advance on Seoul went into high gear on the morn-

tanks destroyed 16 AT guns, several machine guns, and about 200 enemy. Four continuous hours of firing caused one Marine tank crew to pass out from heat and fumes, and the M-26 had to be towed out of position by another machine.

After the crossing of the Han by the 1st Marines on the 24th, the enemy attempted next morning to ambush two platoons of Co B tanks accompanied by a section of flame tanks. But the Marines were not caught napping, and the flame tank fired short bursts which sent the attackers scurrying into the machine gun fire of the M-26s. A first group of about 15 North Koreans surrendered, and 116 comrades soon came in with uplifted hands. In addition, an estimated 150 were killed.

It may have seemed to the men of the 1st Tank Bn that they had already tackled nearly every sort of tactical chore, but a new experience awaited in the street fighting

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Obong-ni Ridge — Russian-made T-34 tanks didn't live up to their publicity

of the battle for Seoul. Tank support was needed continually by the two infantry regiments driving through an oriental city which had a pre-war population of a million and a half. The battle actually consisted of a hundred bitter little battles at the barricades defended by a concealed enemy. First, the Marine tanks and infantry fired in protection of the engineers probing for antitank mines; then the 90mm guns cut the barricade down to size; and the tanks and infantry moved forward with artillery and air support to take the position. There followed a brief lull for evacuating the wounded, and once more the weary Leathernecks went into action against the roadblock a few hundred yards down the street.

On 26 September, at the height of the street fighting, contact was made about 25 miles south of the city by an

Army unit of X Corps with elements of the Eighth Army which had launched a coordinated offensive on the 16th. This meant that all the NK forces in South Korea were threatened with destruction, and the enemy began a disorganized retreat to the northward.

WHILE THE 1ST AND 5TH MARINES took up defensive positions outside Seoul after securing the city, the 7th Marines drove northward toward Uijongbu on the 30th with a mission of blocking the main road leading to Pyongyang, the NK capital. This infantry regiment, which had landed a week after D-day, was supported by Co D tanks. The enemy had heavily mined the area, and no engineers were available to clear the way for tanks as the infantry prepared to assault Hill 171 near Suyu-ri. Armored support was needed so urgently, however, that three Co D tanks were given the mission of advancing. Plans were made for the lead tank to detect mines as best it could and crack or detonate them with bow machine-gun fire if possible. The next two machines were to follow in track, and the little column crept forward safely while four mines were being detonated. Then the third tank failed by inches to track the others, and two blown road wheels resulted. The first two tanks completed a perilous advance of 1,000 yards and knocked out an AT gun while killing an estimated 50 enemy.

This was not a typical operation, of course, and Co D worked out an effective system of giving fire protection to engineers who rode the point tanks and dismounted to remove mines. The tanks were often the targets of small-arms fire which the enemy had learned to aim at antenna bases, periscopes, and vision cupolas. Sometimes, too, hidden foes let a tank go past, then fired on the rear of the turret. Fortunately for the tankmen, North Korean



Korean road-builders didn't figure on tanks

marksmanship was poor, and AT mines remained the weapon most to be respected. Remarkably few casualties were incurred by Co D, and two of them resulted from a freakish bullet penetrating the bore of a 105mm gun when the breech block was open and wounding men of a 'dozer tank.

Enemy tanks made only one noteworthy appearance during the drive to Uijongbu. As a preliminary the Marine armored column ran into heavy NK mortar fire which scored three hits on the lead tank. The .50 cal machine gun mount and radio antenna base were destroyed and the hull set on fire. But the crew extinguished the flames after backing 200 yards to a less exposed spot, and within an hour the machine was in action again. The column continued to move ahead through mortar shells supplemented by the fire of four camouflaged enemy tanks. Luckily an air strike had been called to work over the mortars, and the Corsairs swooped down just in time to destroy the first of the T-34s. Two others were killed by the fire of Marine tanks at a range of 300-400 yards, and the fourth enemy machine waddled away to safety.

Uijongbu fell to the 7th Marines on 3 October, and four days later the 1st Mar Div was relieved by Eighth Army elements. During the three weeks of the Inchon-Seoul operation the 1st Tank Bn had inflicted hundreds of casualties at a cost of one man killed and 48 wounded. The tankmen had destroyed every T-34 venturing within range of their guns — sometimes with only one 90mm round — but not a single Marine tank had been put out of action permanently by enemy tank fire. And even the Marine tanks disabled by mines had not been damaged beyond repair.

On 25 October, when the 1st Mar Div began an unopposed landing at Wonsan, the North Korean remnants

were taking the count. The end of the war seemed in sight as the Marines and three other X Corps divisions moved northward toward the Yalu. Then the Communists of Red China came to the rescue early in November, and the 7th Marines tangled with the 124th CCF Division on the advance from Hamhung to Hagaru.

IN THE ENSUING FOUR-DAY BATTLE the Chinese took such a beating that the crippled division was pulled back into reserve afterwards. Enemy attacks of 3 November were supported by two tanks, one of them escaping after the other was knocked out by the 75s and bazookas. During the next day's advance the infantry surprised five more CCF tanks, four of which were destroyed by air strikes combined with 75mm recoilless and 3.5-inch rocket fire.

These experiences appear to have been taken very seriously by the Chinese generals, for they never again attempted to use tanks against the Marines in the Chosin Reservoir fights. On the other hand, Gen Smith showed his confidence in Marine armor by giving the engineers the mission of making the Hamhung-Hagaru main supply route fit for tanks as soon as possible. Meanwhile the components of the 1st Tank Bn were distributed over an area 112 miles in length, supporting infantry battalions carrying out a variety of blocking and patrolling missions.

Not until 18 November did the first tanks of the battalion test the winding stretch of mountain road from Chinhung-ni to Hagaru. A provisional platoon of M4A3 dozers made the first trip, since it was feared that the heavier M-26s might have trouble. But the engineers had strengthened the MSR sufficiently, and it remained only to await LSTs for water transport of the tank companies completing their detached duties in the Wonsan, Majon-ni, and other areas to the south.

Only a few M-26s had reached Hagaru when the great

A tank-infantry team moves in for the kill



CCF counterstroke cut off the 5th and 7th Marines near Yudam-ni on the night of 27 November. The route from Hagaru to Yudam-ni was glazed with ice, and that afternoon four M-4 tanks slid off the road. Three of them managed to cover the four miles back to Hagaru, but the other was lost that night to the enemy.

After the M-4 tanks ran into difficulty, a lone tank of D Co was sent to Yudam-ni. It was believed that the heavier M-26 might be better suited to icy going, and this proved to be true when No. D-23 arrived without incident. The crew returned in the last truck convoy to Hagaru to lead other tanks the next day. But the enemy set up roadblocks a few hours later, and D-23 was left stranded at Yudam-ni.

Tank and infantry patrols attempted without success

on the 28th to clear the MSR of enemy roadblocks to the south as well as north of Hagaru. Meanwhile the Co B tanks at Chinhung-ni and Co D tanks at Majon-dong were ordered to move up to Hagaru as reinforcements. A few miles past Koto-ri the first group was stopped by strongly defended enemy roadblocks and compelled to return. Men and supplies were so urgently needed at Hagaru, however, that a truck convoy with tanks and infantry set out from Koto-ri on the 29th. Known as Task Force Drysdale, after LtCol D. B. Drysdale of a British Marine company, the column was made up of this contingent, a company each of Marine and Army infantry, and several hundred service troops. The tanks were in the front and rear when the convoy was stopped near the halfway point to Hagaru by the mortar and automatic fire of an estimated three CCF battalions.

The enemy attacked not only the head but also the middle of the column, setting several trucks on fire. As darkness approached to curtail Marine air support, a message from 1st Mar Div headquarters at Hagaru emphasized once more the need for supplies and reinforcements. The head of the column fought its way through with heavy casualties, therefore, as the Marine infantry company and most of the British Marines advanced with



Hagaru — Icy roads gave M-4 tanks plenty of trouble

the tanks. By this time the trucks and service troops in the middle of the column had been cut off, front and rear, and most of the survivors were forced to surrender at dawn after running out of ammunition. The tanks and trucks in the rear were able to make their way back to Koto-ri.

The two platoons of tanks at Hagaru had been hard-pressed by the first Chinese attacks. All the sub-zero night of 28-29 November the enemy came on in overwhelming numbers, trying to break through a perimeter manned only by three companies of combat troops plus every clerk, cook, and truck driver capable of pulling a trigger. The Marine tanks set fire to several shacks harboring CCF troops, and large enemy groups recklessly gathered about the flames for warmth. They became the targets for 90mm and 105mm fire, and 652 CCF dead were counted within 200 yards of the tanks.

In the morning three tanks were sent on the perilous mission of determining the location of enemy roadblocks south of Hagaru. The Chinese swarmed to the attack with satchel charges as well as AT rifle grenades. One of the grenades lobbed into an open hatch and glanced from the cupola padding to the tank commander's shoulder before dropping harmlessly. Fate was in a benevolent mood that

day, for a sachet charge placed on another tank also failed to do any damage. And after firing on the enemy for half an hour, the three machines turned on the frozen ground and got back safely to the defense perimeter.

THE NEED FOR reinforcements at Hagaru had justified the risks of Task Force Drysdale, but the result made it plain that even large detachments ran the danger of being overwhelmed by sheer weight of numbers. It was decided, therefore, that the 5th and 7th Marines were to come out of Yudam-ni in full force, so that the reunited division could fight its way from Hagaru to the seacoast.

The presence of the empty tank at Yudam-ni was reported to CO, 7th Marines, who requested that a crew be sent by helicopter. This assignment went to a Co C crew, and No. D-23 led the column when it moved out on 2 December.

Armored warfare was necessarily limited to small operations in mountain terrain, but perhaps never has a lone tank played such an important part. D-23 carried out firing missions for the point company during the first day's advance and assisted in evacuation of wounded. That night the machine was employed defensively and credited with knocking out two enemy machine guns and an AT gun.

Two CCF roadblocks were destroyed by D-23 next morning before the engine died. The crew changed batteries under enemy fire, then disposed of a third roadblock. When the tank ran low on fuel, two crew members got out on foot and recovered 15 gallons of gas from abandoned vehicles. D-23 "bellied" while attacking a fourth roadblock, and the crew worked all night to free it. By noon the men were so exhausted from fumes, hunger, and lack of sleep that the loader had to be relieved by an infantryman. But three more roadblocks were knocked out before the saga of D-23 came to an end, with the crew reporting "no further incident" after leading the column into Hagaru.

ON 6 DECEMBER, as the 1st Mar Div moved out from Hagaru toward Koto-ri, tanks supported the point company of the 7th Marines. Tanks were also the last elements of the division to leave Hagaru with the 5th Marines. The 90mm guns were kept busy with firing missions in cooperation with the infantry, and the tank machine guns aided in several firefights.

Maintenance problems, it is hardly necessary to add, were of critical importance as the column departed Koto-ri on frozen roads in bitterly cold weather. When a crew got in and out of a tank several times, the men's breathing caused a film of ice to form on the interior. Frost dimmed the periscopes and vapor resulted in frozen fuel pumps and fuel cut-off valves. These were only a few of the difficulties overcome by maintenance men often work-

ing with bare hands under enemy fire. Yet only one tank was lost all the way to Koto-ri — a machine that burned after a leaking radiator led to an overheated engine.

The consequences would have been disastrous, of course, if a tank had broken down and blocked the road for vehicles filled with wounded. As a precaution, the tanks and heavy vehicles were grouped in the column so that power would be available to work a cripple off the road. This measure paid off near Chinhung-ni when the brakes locked on the ninth tank from the rear. It was pushed into the ditch by the two following tanks, but the first one also developed a brake lock just as the Chinese attacked the last machine of all. A savage firefight began after the tankmen scrambled out to form a defensive line. During this action the drivers managed to save the two leading tanks after releasing the locked brake. But the remaining seven had to be left behind for destruction by friendly air strikes.

Later that day another tank was pushed off a cliff, due to mechanical failure. But the 1st Tank Bn had the satisfaction that not a single machine had been destroyed by enemy action during the entire Chosin Reservoir operation.

ONLY A UNIT HISTORY could take the story of Marine armor from the reservoir through operations Killer and Ripper, the CCF counteroffensives, and the other fights of 1951 and 1952. Most of these later chapters would be repetitive, of course, since the 1st Tank Bn came up against few problems that had not been encountered during the first five months in Korea.

In all American military history previous to 1950, tankmen had never contended with such fierce extremes of temperature in such a short period — from the 105-degree heat of the Pusan Perimeter in August to the 30-below-zero cold of the Chosin Reservoir in November! Climate and terrain, in fact, gave the 1st Tank Bn a good deal more trouble than the enemy.

As for combat, the results demonstrated the superiority of the M-26 over the "caviar can." This outcome owed as much to Marine training and tactics as mechanical excellence of American tanks. Even after allowances are made for the enemy having less armor and lacking air power, never once did a Marine tank lose to a T-34 in equal combat. And never once did enemy AT guns or mines put one of our machines permanently out of business during the first five months of Marine operations in Korea.

It took North Korean weather to accomplish what North Korean tanks were unable to do, and the only serious Marine losses came from ice rather than fire.

US MC

Next Month: Marine Artillery in Korea



The Wage for the Job

By Maj Reginald Hargreaves, MC

■ A REPORT HAS APPEARED IN THE LONDON PRESS THAT the men and women of the United States Armed Forces have been awarded a raise in pay; and their British well-wishers have heard the news with a sincere satisfaction. Yet, however substantial the increase may be, it is a moral certainty that a considerable number of individuals will regard it as altogether inadequate.

Over the years, the problem of the fighting-man's pay

ILLUSTRATED BY THE AUTHOR

"No final figure can be set to the fighting man's wage, for his bargain is not with the state; he has a contract with humanity"

has been approached from so many different and sometimes contradictory angles that a clear line of thought on the subject is not easy to evolve.

At its outset, warfare took the form of a raid by one primitive tribe on the better-stocked hunting grounds of a neighbor. It was an activity in which all those capable of wielding a weapon were engaged; and the only pay-off was a better lined belly for the victor. It was when the vanquished, instead of being slaughtered out of hand, were kept alive in bondage, that the fighting man drew his first wage—in the form of a slave who, willy-nilly, undertook all the unpleasant and laborious chores in return for food to keep him alive. Inequality—in this early instance of physical prowess—is the foundation of property-owning, which in its turn is the basis of all civilization as we know it.

THE ARMIES OF CLASSIC Greece and Rome, with their stern discipline, their mastery of maneuver, and skill at arms, were the first fighting men to receive a regular wage; although it is to be borne in mind that the soldiery of the early Roman republic regarded it as a favor to be called to arms, and gave no thought to payment or reward. In later days, however, the rank and file of the Roman legions drew a regular yearly wage of 225 *denarii*—say approximately \$48.¹ From this annual stipend, doled out in three regular installments, was deducted the cost of rations, clothing, and equipment. For all that, the Legionary still had enough left in his purse for a cup of wine; could still indulge that passion for gambling—an early form of crap-shooting—which was one of his prominent characteristics. Besides, there was always the chance that his share of legitimate spoil of war could be turned into ready money to repair the gap in his financial resources. In effect, the state offered the individual a reasonably good bargain: 20-years service, at a wage three times greater than that of a skilled workman, which was ultimately rewarded by a liberal grant of land and a substantial rate of retirement pay; with preferential treatment with regard to appointment to certain minor posts in the civil administration. Furthermore, there was always the chance of re-enlistment in the ranks of *Evocati*, or hand-picked veterans, by whom the ranks were judiciously stiffened. For needless to add, these *Evocati* were accorded special rates of pay with accelerated chances of promotion, together with many prerogatives including the right to a mount on the line of march, and exemption from all “fatigues.” With all these provisions for the after-care of the soldier, it is little wonder that service in

¹To obtain some idea of the relative value of spending money, then and now, it would be on the safe side to multiply this total of \$48 by 12. Rates of pay for officers and what we would now term noncommissioned officers, were on a proportionate scale.

the fighting forces of Rome was regarded not only as a duty, but as a privilege.

The eclipse of Rome² plunged the world into a dark age, a relapse into barbarism, wherein the fighting-man's wage could best be summed up as being comprised by the three Ls—loot, lust, and liquor. The wild host that followed in the train of Genghis Khan (1162-1227) reproduced only too faithfully all the brutishness, all the hunger for booty, and all the contempt for life, for chastity, and for the helplessness of the very young and the very old which had characterised the hordes of Attila the Hun.

The emergence of the feudal system was the outcome of man's urgent need to create some sort of order out of the prevailing conditions of chaos. His attempt to build up a system wherein each individual pulled his weight according to his ability to shoulder responsibility was, indeed, the first sign of convalescence from the sickness of dark confusion into which the world had so painfully been plunged. The system which evolved was doubtless very far from perfect, but it was a vast improvement on what had preceded it—and, for that matter, a good deal to be preferred to much that came after it!

At least it elevated the fighting man from the degraded level to which he had sunk, to a plane of usefulness not entirely empty of honourable associations. For under the mending influence of the Church, “the customs and usages of war” sought to restrain the worst barbarities of conflict, to safeguard the rights of the wounded and prisoners, establish immunity from plundering and injury for the noncombatant, preserve the sanctity of consecrated buildings, and define the conditions under which a captured town could be given protection against damage. The aim was nothing less than to transform the brutalised Pagan fighting man into the idealised, chivalrous Christian man-at-arms, “uniting,” as Lecky put it, “all the force and fire of the ancient warrior with something of the tenderness and humility of the Christian saint.”

IN BRIEF, LAND WAS HELD on tenure from the Sovereign, part of the obligation of tenureship being liability to serve the King in arms, if called upon, in time of war. In token of the personal stake the feudal tenant held the land of his birth, the first 40 days of such military service were at the individual's own charge. It was his own share of a joint heritage that he was in arms to defend; it was taken as a matter of course that he valued it sufficiently to be at some personal expense to preserve it. It was only when hostilities dragged on beyond the point at which

²Rome fell because she had become so spent that service in the Legions lost its pride and popularity, and defense was abandoned to *auxilia*, or hired mercenaries of foreign birth, with no greater inspiration to valour than their meager pay. Rome fell, not because she went to war, but because she went to war inefficiently.

his own resources gave out that the Sovereign, out of such reserves as his "treasure chest" might yield, at length assumed responsibility for those disbursements necessary to keep the army in the field.

Some idea of the scale of pay — the wage for the job which pertained when all ranks became a charge on what was known as the "King's Hoard" — may be gathered from a "Quittance Roll" for the Calais garrison of 1346. The Welch spearmen, forming the "rabble of foot," were the most modestly remunerated, at twopence a day;³ the Vintenars, or noncommissioned officers in charge of squads of 20, qualified for a daily fourpence. Foot archers received three-pence a day; mounted archers, the horsed Paunce-nars, and Hobelars sixpence; masons, carpenters, smiths, engineers, miners, and artillators (gunners), from three-pence, to 10, according to their rating. At the head of the list stood the Prince of Wales — the famous Black Prince — at 20 shillings, out of which, however, he had to find the funds for his spies and secret service generally.⁴ Rather oddly, the Bishop of Durham comes next, at six shillings and eightpence a day, which was also the stipend of all earls. But as it so happened, His Reverence swung a very pretty mace, and doubtless gave five shillings' worth of combat service as against one-and-eightpence worth of spiritual consolation! Barons received a daily 4 shillings, knights 2 shillings, and constables, esquires, and captains were all rated at 1 shilling. It is to be borne in mind, however, that each

³Some idea of the contemporary spending value of money will be arrived at if all these totals are multiplied by 10. (Ed Note: The British penny or penny is worth about the same as ours. Twelve pennies make one shilling; 20 shillings, one pound. At the current exchange rate, one U. S. dollar is worth 7 shillings and two pennies. The pound is equal to \$2.80 in our money.)

⁴As Marlborough had to provide for his secret service out of his percentage of the men's "bread money," and Marshal Joffre had to provide the stationery for his headquarters out of his consolidated rate of pay and allowances.



"... could still indulge that passion for gambling"

man mustered with weapons of his own providing; while the mounted men furnished their own horses, for which they could claim compensation were their mounts lost through enemy action.

Examination of this wage pattern will make it clear that the concept of service before self played a far more important part in the fighting-man's mental outlook than the chance of gain offered by profitable pillage which, under rigorous control, was considered entirely legitimate and undoubtedly added its spice to the call to active service. It was the selfsame capacity to exalt an ideal above all hope of personal advantage which took many a decent, humble man voyaging across the seas to fight, on a mere pittance, for the redemption of the Holy Land in the earlier Crusades.

The progressive deterioration of the feudal system, which saw the acceptance of money payments in lieu of self-supporting personal service, again opened the door to the mercenary — such as Rome had employed to her

ultimate ruin—that professional man-at-arms who frankly made a trade of soldiering and fought for what he could get out of it—in cash or in kind. Service in war, instead of remaining an obligation of honour, became commercialised, a matter of hard bargaining. The old nominal scales of (relatively) token pay were of small use to the mercenary, whose wage for the job was the very utmost he could persuade or bully a prospective employer into paying. With the rise to eminence, for example, of the English-born White Company (on hire under its commander Sir John Hawkwood, to whatever Italian ruler could afford to bid for its services) competition for the services of the *Compagnia Bianca* was sometimes so fierce that terms could finally be exacted which filled the pockets even of the humblest man in the ranks with broad gold pieces. For "half down, on account, and the balance when we've won your war for you," was a rule the mercenary captain held to with absolute inflexibility.

Furthermore, with the rise of the mercenary soldier quite unashamedly "on the make," warfare again took on a ruthlessness and barbarity entirely unknown to the outmoded age of chivalry. For loot played an increasing part in satisfying the mercenary's thirst for gain; and in the mad scramble to lay hands on it, the half-forgotten "customs and usages of war" which hitherto had exercised such humanitarian control were "far more honoured in the breach, than in the observance." Time had been when the man-at-arms, sword in hand and hot from the fight, had still found it in him to respect the law conferring immunity from violence on "all who might take refuge in a Church, at a wayside cross or at the plough;" as he had bowed to the decree which placed under its protection "the chamber or lodging where a woman lay in childbed," all "implements of husbandry," and even "apple trees, pear trees, nuts, or any other trees bearing fruit."⁵

With the mercenary on the rampage, however, such out-of-fashion restrictions on gainful activity were laughed out of court with an abandon to which warfare's mounting roll of victimised non-combatants bore eloquent witness.

It must be acknowledged, however, that in their strictly professional capacity, the mercenaries earned their high rates of pay by a fighting quality only matched by the faithfulness with which they fought in the cause for which their services had been hired. German landsknechts, Spanish swordsmen, Swiss pikemen, the sternly disciplined array under such notable adventurers as Hawkwood,⁶ Albert Sterz, and Armand de Cervolles—all at-

⁵These and many other "customs and usages of war" were embodied in the "Articles of War" promulgated by England's warrior king, Henry V (1413-1422).

tained eminence on the score of a reliability, as well as a professional skill, that was more than worth the high cost of their employment. Indeed, so late as 1683 it was some 18,000 Polish mercenaries, under John Sobieski, who whirled in to the rescue of hard-pressed Vienna, scattering the huge Turkish army under Kara Mustapha, and vigorously helping to redeem Sobieski's promise that nightfall would find him sleeping in the Pasha's tent or in six feet of earth. But before darkness had fallen, every morsel of treasure had been swept into their spacious saddle-bags, and the Austrians, sallying out hopefully from the walls of Vienna, found the fallen Turkish camp stripped as bare as though it had been ravished by a plague of locusts.

It is, of course, not to be gainsaid that the instinct to seek recompense for his perils in pillage is characteristic of the fighting man of all ages. After a considerable period of repression, it reasserted itself with extraordinary violence after the British capture of Badajoz in 1812; it was the cause of perpetual anxiety to the authorities throughout the Indian Mutiny; it was a dominant feature of the German advance into France in 1870; while so late as 1945 the Russian staff officer, Ivan Krylof, noted Cossacks busily at work in newly-captured Königsberg, rifling a house of everything it contained, down to a canary in its cage. Thoroughly up to date, instead of the traditional saddle bags, they employed a lorry which had much more capacity! For that matter, on both sides of the Atlantic there must be a considerable number of wrist-watches and Zeiss binoculars which in some mildly nefarious manner have somehow become separated from their original owners!

Even the most exalted concept of the fighting man's duty and obligations is prone to falter when there's a chance of acquiring a little profitable spoil of war.

With the inauguration of standing armies by Charles VII of France (1422-1460) and their subsequent appearance in the other European countries, the whole question of the fighting-man's payment underwent a gradual re-orientation. The somewhat optimistic idea advanced was to the effect that every fit man amongst the respective countries' nationals would be prepared to take up arms in defence of the state's interests, and without the slightest thought of personal reward. This convenient, if scarcely flawless, assumption permitted the wage for the job to be so drastically scaled down as to render the expansion of the ranks in time of war a problem of con-

⁶Hawkwood's *Compagnia Bianca* was notable for its exemplary discipline—until turned loose to plunder!—the cleanliness and perfection of its weapons and equipment, its admirable "interior economy," which included what can only be described as a loan club, and the generosity of the pensions with which it rewarded those too injured to take their place in the ranks.

siderable difficulty. The supply of "starvation" recruits and those minor offenders against the law who had chosen military service as an alternative to jail, soon proved insufficient to meet the increased demand for men. So to the wiles and blandishments of the recruiting sergeant were added the more dubious activities of luring men into the services and the forthright compulsive methods of the press-gang.

Even with the "New Model" army got together by Oliver Cromwell to wage "ideological" war against the Royalist dissenters, the flow of voluntary enlistments soon proved inadequate. Unquestionably there were fanatics in the ranks whose zeal for the cause gave no thought to the pecuniary reward by which their services were recompensed. But they were in a distinct minority. It was only by the offer of what, by contemporary standards, were quite attractive rates of pay—2 shillings a day for a trooper of Horse, one shilling and sixpence for a Dragoon, and eightpence for a foot soldier; with free arms, equipment and uniform, and a cash grant to the mounted man who furnished his own animal—that the ranks could be kept at strength.⁷ Towards the end of the struggle, what with the drain of casualties and the expanding total of regiments, there was no alternative but to coerce men into the ranks by means which did not stop short of organised conscription.

IT IS TO BE RECOGNISED, of course, that the considerable restriction placed on pillage did much to discourage the erstwhile type of adventurous recruit who was prepared to incur unusual risks on the offchance of securing profitable loot. Lawful plunder was still grudgingly permitted, since pay was often in arrears and frequently took the form of "debentures" which had to be discounted at a loss. In the circumstances a blind eye had to be turned on activities the authorities were in no position to suppress; as when dour, tobacco-chewing George Monck, after the storming of Dundee in 1651, found himself with no option but to sanction the plunder of the town for 24 hours. But the whole business was so strictly supervised, with the best of the pickings set aside for the superior officers before the rank and file were turned loose, that plundering could scarcely be said any longer to come under the heading of "gainful employment."

But the tendency was increasingly to discourage looting, since the greater complexity of warfare demanded

⁷With wheat at 35 shillings a quarter (eight bushels), beef at threepence a pound, pork and mutton at twopence a pound, a boiling chicken at threepence, and a good pullet obtainable for sixpence, and with ale, cider, and perry costing a few pence a quart, a man could subsist himself quite well at these rates. Forage was a heavy item which the Horse and Dragoons had to bear out of their own pockets; and an increase of pay was necessary in 1647 when wheat rose to 62 shillings the quarter.

for its mastery a sterner discipline, a more rigid control over all those engaged in its prosecution. And as Napoleon once roundly affirmed, "Nothing can be more relied upon to disorganise an army than pillage," although he would not appear to have arrived at this conclusion until after his bandit raid into Italy of 1797!

In some measure to make up for the profits that earlier days would have seen extracted from pillage, as also to offer a real inducement to enroll, the system arose of offering bounties to potential recruits, to be paid, in whole or in part, on enlistment. This device, together with such incidentals as payment for "fatigues" (for example, at 2d Louisbourg, 1758, and at the siege of Valenciennes 1794, men at work on the field fortifications were paid at the handsome rate of one shilling a day, in addition to their pay) did a little something to atone for the miserable pittance with which fighting men had to rest content. How pitiful it was may be seen by examination of the wage for the job prevailing in the 18th century. The British able seaman, for example, drew, on average, the sum of 17 shillings a month, rising to 24 shillings after 10 years' service; a far poorer wage than that paid to the merchant seamen serving in the East Indiamen, who drew from 35 to 40 shillings monthly. (At the other end of the scale, a captain drew eight shillings a day.) Fines for bad conduct and stoppages for slop-chest clothing wore a considerable hole in the seaman's wage, which was scarcely atoned for by such occasional payments as "hard-lying money."⁸ The chance of profitable "naval prize," on the other hand, held out far greater prospect of rich reward than such legitimate spoil of war as occasionally came the way of the toiling redcoat. Admiral Sir Charles Saunders' capture of the Spanish treasure-ship *Hermione* in 1762, for example, was followed by a share-out amongst the officers and men of 544,648 pounds; while Rodney's seizure of St. Eustatius in the February of 1781 secured booty estimated to be worth \$20,000,000. It is true that the fall of Seringapatam in 1799 brought in coin and jewels worth over 1,143,000 pounds; while the loot distributed after Wellington's triumph at Vittoria in the June of 1813 was valued at close on a million pounds sterling. But such rich hauls were a rarity in land warfare, while the capture of profitable "naval prize" was a regular feature of war at sea.

Unquestionably, the payment of bounty-money to the soldier was no more than a paltry substitute for the opportunity to pillage. In any case, the offer of bounty was always a mischievous, catch-penny device, leading invariably to costly and mutually destructive competition. This was demonstrated in North America throughout the

⁸For service of particular danger or discomfort. It is still paid to the personnel of submarines.

whole period of the War of Independence.

At the outset of hostilities, the rate for the job decreed by Congress for the Continental Line endowed the man in the ranks with a monthly wage of six dollars, plus a bounty of \$10, subsequently raised to \$20; with a free suit of clothes and a blanket, or a down-payment of \$20 in lieu thereof.⁹ Until the rising cost of living and the depreciation in the value of Congress paper "currency" reduced the spending value of the soldier's wage to the region of the negligible, the comment in Washington's Orderly Book that the American man-at-arms was, by contemporary standards, the best paid fighter in the world, was not to be disputed. But the whole situation where the Continental Line was concerned was persistently bedeviled by the reckless competition by which the several states sought to secure recruits for their own militia and State Line. When New Jersey in the June of 1776 outbid Congress' offer of a \$10 bounty by proferring \$33, Massachusetts generously stepped in and "raised the ante" with a bait of \$53. Rates of pay also developed enormous disparity. There were militiamen who received as much as \$150 *in coin* for a mere five months' service; while the Emergency Coastguard's men were soon in receipt of nearly six times as much as a private in the Continental Line. In addition, the glittering lure of "naval prize" drew no less than 10,000 hardy and resolute men into the service of the privateers that preyed so successfully on British shipping.

Small wonder that recruiting for the national army became a matter of increasing complexity and difficulty; and all honour to the hard core of determined patriots

⁹There was also a promise of freehold land, varying in acreage according to rank; and, in certain circumstances, the right to a disablement pension.

"... Massachusetts raised the ante to \$53.00"



who, without thought of selfish gain, bore manfully with all the moral deflation and pinch-gut miseries of Valley Forge, and the hazards and privations of Greene's exacting and undernourished campaign in the South.

But recruiting in 18th century England was certainly no easier; indeed, the country's commitments were so many and the butter in consequence was spread so thin, that resource had to be made to the ruinous device of hiring mercenaries. For that, in plain terms, is what the Hessian auxiliaries were, notwithstanding the fact that it was not they, but their greedy rulers who pocketed the bulk of the blood money offered for the use of their indifferent services.

Even so, by contemporary standards both the British and Hessian troops could consider themselves on velvet compared with the troops of certain other Western Powers. With the Portuguese forces, for example, wage-rates were so low and pay for all ranks was always so grossly in arrear, that many of the officers' wives were forced to take in laundry-work to help keep a roof over their heads. Generals unable to find the money to pay their soldier-servants, would try to put things square by giving them commissions; while the starvecrow Royal Guard outside the King's palace in Lisbon would openly solicit alms of the passers-by.

For all that, so far as the British rank and file were concerned, scales of pay showed no improvement on those pertaining a hundred years earlier; while the wage for the job was further reduced by "stoppages" and deductions of infinite intricacy, devised with an ingenuity that was almost uncanny. The redcoat in North America in 1775, for example, drew pay at the basic rate of eightpence a day, from which a daily sixpence was promptly subtracted for his "subsistence."

"Gross off-reckonings" from the extremely modest balance included sixpence a week for the cost and subsequent upkeep of shoes, stockings, gaiters, medicines, and the repair of arms; with an annual one shilling in the pound for the paymaster-general, one day's full pay towards the maintenance of Chelsea Hospital, and a further deduction of twopence in the pound for a regimental agent. With occasional contributions to the "stock-purse" and "non-effective funds," the wretched man in the rear ranks was lucky

indeed if he handled as much as 20 shillings in spending-money over the whole 12 months. It was not until the days of "the soldier's friend," Frederick, Duke of York (1763-1827), that the pay of the rank and file was raised to one shilling a day. At the same time the able seaman's wage was consolidated at 28 pounds, 17 shillings and onepence a year. Where the soldier was concerned, a further three-quarters of a century elapsed before "proficiency pay" added a few daily pence to the wages of those who qualified for it. Even now, with the basic rate of pay for the newly-enlisted man standing at one pound and eight shillings a week—rising to a maximum of two pounds, 19 shillings, and sixpence—the pay for the job compares none too favorably with the remuneration obtainable in civil employment, despite the fact that the serviceman is provided with free food, clothing, and quarters—a consideration that he himself invariably leaves out of his calculations.

None the less, the general standard of British pay, while on a considerably lower scale than that enjoyed by the Armed Forces of the United States and the troops of the British Dominions overseas, is incomparably better than the wage rates pertaining in European armies as a whole, which still remain on a level reminiscent of the worst days of the 18th century.

CAUGHT IN THE PERPETRATION of some minor military crime by Sherman, during the course of his Georgia campaign, the delinquent argued back with a plausible show of reason, "Well, General, you can't expect all the cardinal virtues for 13 dollars a month."

But that is precisely what *must* be expected of any fighting man worthy of his salt. And the miraculous thing is that, however inadequate his wage, the cardinal virtues of courage, fortitude, and selflessness are precisely what an astonishingly high proportion of them are prepared to give, ungrudgingly and without stint. That is not to elevate the fighting man to the category of a plaster saint. He is, quite simply, an ordinary human being who has realised and rationalised himself, and attained the spiritual stature to accept a challenge to his manhood before which a lesser man would quail.

Such service as he gives can never be recognised in terms of cash. In any case, it is impossible for the state to set an actual value, in terms of money, on a fighting-man's life, the more especially as the state may well call upon him to expend it prematurely. Even where such a computation is within the bounds of feasibility, it would be certain to differ from one individual to another; while the meanest sum arrived at would be far beyond the limits of expenditure the average citizen would be prepared to endorse.

For the wage for the job lies ultimately at the mercy of

the man who has to foot the bill—the taxpayer. And his generosity in this particular is apt to be in inverse ratio to his feeling of security.

"The faithful warrior, famous for fight,
After a thousand victories once foil'd,
Is from the book of honour razed quite,
And all the rest forgot for which he toil'd"

In time of war the urgent need for the fighting man leaves no room for quibbling as to his cost. But once the echoes of the last shot have died away, "Other Romans shall arise, heedless of the soldier's name;" and since they pay the piper, they appropriate to themselves the right to call the tune. The state is the warden of the nation's safety; but it is also the guardian of the citizen's purse; and the balance it strikes between the two can never appreciably favor the fighting man.

IN TIMES OF PEACE, the best the state can do for those who serve it in arms is to provide them with a living wage, scaled according to those responsibilities that go with rank, and as nearly approaching parity with comparable jobs in civil life as budgetary considerations will allow. The rest is a matter of what the individual fighting man is prepared to throw into the scale in the way of (pecuniarily) unrequited service; what the Cockney terms "the little bit of fat on the 'am wot don't get paid for." Happily, that "little bit of fat" has hitherto been thrown in with an ungrudging generosity which has shamed the bargainer and left the meaner-spirited agape. For by a miraculous piece of good fortune, the fighting man of the great Western democracies is free of the spirit of the hired mercenary, seeking to profit out of calamity. He takes up arms with a clear conscience in a good cause, aware that his victories in battle are but the bricks and mortar out of which can be built a more just and enduring peace. His watchword is the proud motto of England's Prince of Wales, *Ich Dien*—"I serve." And only too well he realises that in service for one's country there can be no legalistic statutory limit. To that service the fighting man is dedicated as surely as any medieval knight who kept his midnight vigil before the altar. For true patriotism is "not a song in the street, or a flag flying from a window; it is a thing very holy and very terrible, like life itself. It is a burden to be borne, a thing to labour for and to suffer for; a thing which gives scant happiness and little pleasantness; but a hard life . . . and the respect and bowed heads of those who follow."

It was for this lofty sense of dedication that Cromwell sought when he cried aloud for "men who make some conscience of what they do; men who know what they fight for and love what they know."

No final figure can be set to the fighting man's wage; for his bargain is not with the state; he has a contract with humanity.

US MC

Passing in Review

BOOKS OF INTEREST TO MARINE READERS

Five-Star Diplomat . . .

DOUGLAS MacARTHUR—Clark Lee and Richard Henschel. 370 pages, illustrated and indexed. New York: Henry Holt & Co., 1952.

\$6.00

Mention the name of General MacArthur and immediately one's listeners choose up sides. The authors of *Douglas MacArthur* are cognizant of this situation—and fortunately so—for they have, by adroit handling, saved the book from being either a publicity release or a repetition of some of the acrimony that has been thrown at MacArthur by his critics. With the open declaration that they expect to change no one's mind about MacArthur, they have set down the events in his colorful and influential life—with its many intriguing and hitherto unrevealed sidelights—for the purpose of showing how they molded his destiny.

Fortunately too, MacArthur's supporters and critics are agreed on his brilliance as a military strategist and as a field soldier, as a general who could inspire men and win battles even when the outlook was bleak; a man whose flair for dramatics and decision could capture the imagination of his men and command their utmost loyalty.

Basically, it is this MacArthur who is the subject of the book. His early days as a general's son, as a West Pointer and a rising junior officer, his rivalry with General Marshall—in fact all the events of his life have been analyzed for their effect on MacArthur, the soldier of arms and diplomacy. The controversial elements are there, but they have been handled with a remarkable candor and a clarity that allows the reader to form his own conclusions.

The authors do not pretend to have carved MacArthur's ultimate niche in American history. But they have com-

piled an unconventional documentary of the man that is excellent reading for anyone, and particularly for the professional soldier.

The volume is in two parts: a word biography by Clark Lee, the veteran correspondent who has known

MacArthur since Pearl Harbor, and a photographic biography of some 375 pictures—many never before published—prepared by Richard Henschel, a newspaperman who formerly was MacArthur's photographic officer.

Whether the reader is pro or con on the subject of General MacArthur, he will find this book a distinct contribution toward the better understanding of a soldier who played a major role in shaping the past and future of twentieth century American foreign policy.

Reviewed by
Capt Jerald F. terHorst



Strategist in a Stovepipe Hat . . .

LINCOLN AND HIS GENERALS—T. Harry Williams. 375 pages. New York: Knopf. \$4.00

In his introduction to this study, T. Harry Williams writes: "This book . . . treats of Lincoln as a war director . . . from the perspective of modern war." In other words, it is a history of Lincoln's command system and especially of the part Lincoln played in that system. The book deals mainly with the overall strategic decisions of the war; it has very little to do with battlefield tactics.

Had the book been simply a chronology of Lincoln's strategic decisions, it would have made lifeless reading. However, the personalities of the persons involved are drawn strongly enough to enable the reader to accompany Lincoln on his search through the maze of indecisions characteristic of the early leaders of the Army of

the Potomac for an intelligent, aggressive, and responsible leader. The book is spiced with Lincoln's caustic comments on his generals. For example, the Army of the Potomac becomes "McClellan's Bodyguard." Comments such as this make the story personal and entertaining.

A point to be criticized is the author's obvious delight with Grant as a military leader. Lincoln appears to have welcomed him with open arms and to have supported completely his every move. Disillusioned as he was by the faults of his former chiefs, Lincoln must have had a slight lack of confidence in the military mind. It is hard to believe that, even with his western victories, the collapse of Grant's canal-building scheme to capture Vicksburg, and the defeat of his attempt to outflank Lee and force him to do battle north of Richmond, would not have displeased a leader like Lincoln.

Another controversial point is the position of Halleck. The author believes that Halleck "cast himself in the role of an interested and informed observer" and failed to exercise his authority in making decisions, even though he was general in chief. Lincoln at first permitted Halleck to make most of the strategic decisions, but gradually the President assumed actual control, Halleck merely advising him. As Mr. Williams points out, Lincoln was at this time attempting to evolve the correct command relationships. An interesting question arises as to whether Halleck had the power of command, and gave it up voluntarily, or whether Lincoln felt himself to be better qualified than Halleck to make strategic decisions and forced the general in chief to be only the co-ordinator and executor of his plans.

To anyone interested in military history, the Civil War provides an excellent opportunity for observing the changes from a command system designed to control a single army operating almost within sight of a single objective, to a command system controlling several armies operating at a great distance against many varied local objectives, but with a common overall objective. Mr. Williams has presented this opportunity in an entertaining manner and has at the same time effectively supported his view of Lincoln as a great war director.

Reviewed by 1stLt Nolan Lushington

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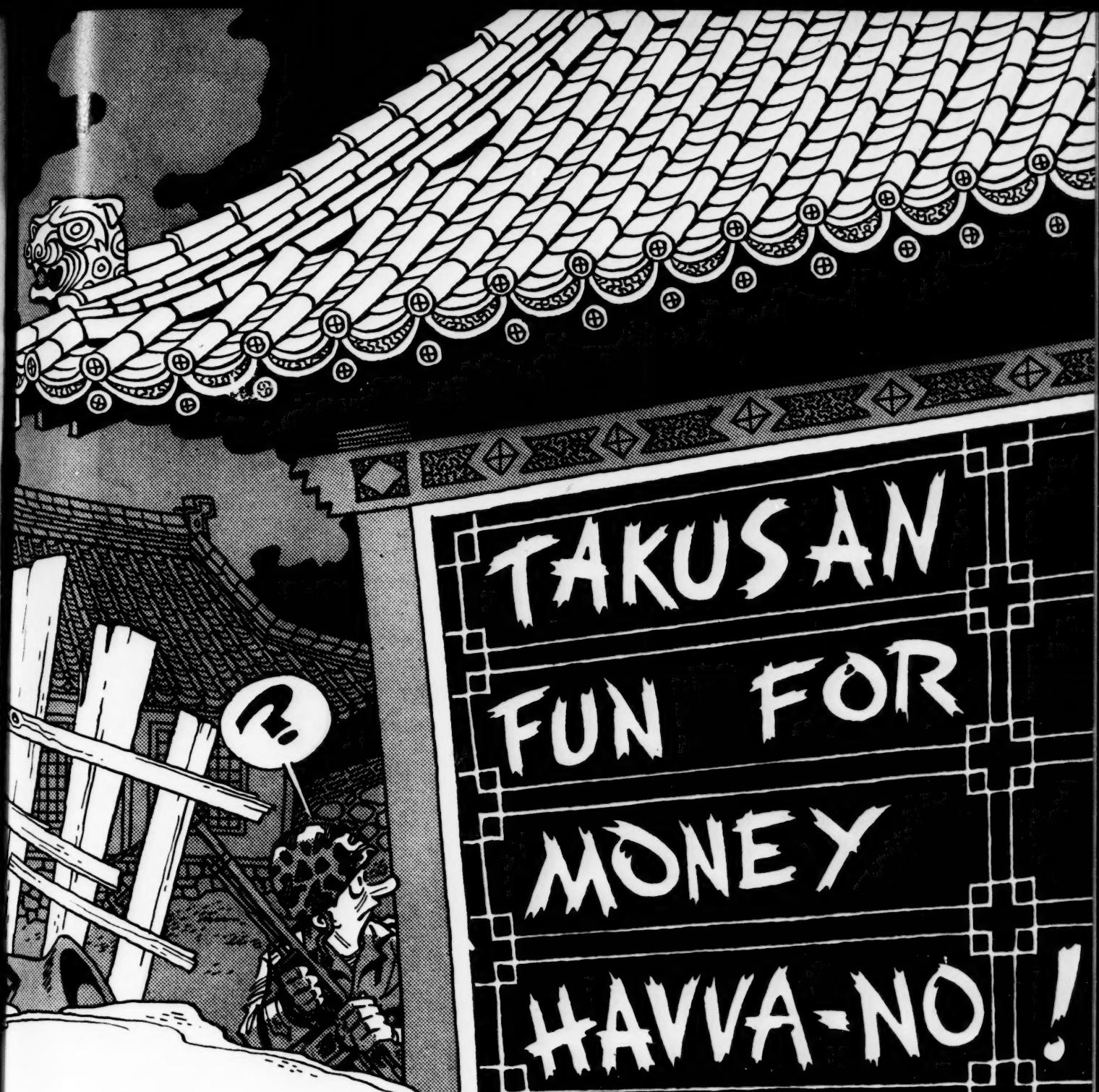
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